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IN THE

Supreme Court of the United States

OCTOBER TERM, 1998

KUMHO TIRE COMPANY, LTD., KUMHO U.S.A., INC., and HERCULES TIRE & RUBBER COMPANY, INC.,

Petitioners,

v.

PATRICK CARMICHAEL, an individual and father and next of kin to PATRICK CARMICHAEL, JR., a minor, LUZVIMINDA CARMICHAEL, an individual and mother and next friend of CARINA HORN, a minor, and administratrix of the estate of JANICE HORN, CARINA HORN, a minor, LEONA CARMICHAEL, SHAMEELA CARMICHAEL, and NATIMAH CARMICHAEL,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Eleventh Circuit

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BRIEF OF RESPONDENTS

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QUESTION PRESENTED

In determining the reliability of expert opinion pursuant to Federal Rule of Evidence 702, may district courts apply the "general observations" set forth in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), regardless of whether they are relevant to the field of expertise at issue?

TABLE OF CONTENTS

	Page
QUESTION PRESENTED	i
TABLE OF AUTHORITIES	v
STATEMENT	1
A. The Tire Failure	2
B. The Tire Failure Analysis	3
1. The Question Addressed by the Experts	3
2. The Nature of Carlson's Experience	4
3. The Methodology of Tire Failure Analysis	5
4. The Application of the Methodology by the Experts	8
C. The District Court Opinion	12
D. The Eleventh Circuit Opinion	14
SUMMARY OF ARGUMENT	15
ARGUMENT	17
I. RULE 702 REQUIRES THAT THE ADMISSIBILITY OF EXPERT OPINIONS BE BASED ON INDICIA OF RELIABILITY DRAWN FROM THE PARTICULAR DISCIPLINE AT ISSUE	17
A. The Eleventh Circuit Was Guided by Rule 702 and the Teaching of *Daubert* in Rejecting the Automatic Application of the "General Observations" Set Forth in *Daubert* and Remanding the Case for an Assessment of the Expert's Reliabiltiy in Accordance With Factors From His Discipline	20
B. The Federal Rules of Evidence and the Rationale for a Proposed Amendment to Rule 702 Confirm That the Reliability Inquiry Must Be Based on Factors Appropriate to the Expert's Particular Discipline	23

TABLE OF CONTENTS—Continued

Page

1. The Federal Rules of Evidence Governing Expert Witnesses Demonstrate That Reliability Depends Upon Factors Applicable to the Expert's Particular Discipline 23

2. The Advisory Committee on Evidence Rules Recently Recommended an Approach to Assessing Reliability That Is Guided by the Nature of the Discipline at Issue 25

C. The Use of *Daubert*'s "General Observations" in This Case Reveals Their Shortcomings When They Are Applied in a Universal and Mechanical Manner 27

1. Unless an Expert's Field Warrants Application of *Daubert*'s "General Observations," the Reliability Determination That Ensues Will Be Arbitrary 28

2. The Methods and Principles Associated With an Expert's Discipline, Not the Name or Category Assigned to the Discipline, Must Inform the Reliability Determination 33

D. The Universal Application of *Daubert's* "General Observations" Could Lead to Widespread Exclusion of Experts Whose Opinions Are Otherwise Well-Recognized 35

II. HAD THE DISTRICT COURT CONSIDERED THE FIELD OF TIRE FAILURE ANALYSIS IN DETERMINING THE ADMISSIBILITY OF CARLSON'S TESTIMONY, IT WOULD HAVE FOUND SIGNIFICANT INDICIA OF RELIABILITY PRESENT IN THE RECORD.. 38

CONCLUSION 48

TABLE OF AUTHORITIES

Cases: Page

Ambrosini v. Labarraque, 101 F.3d 129 (D.C. Cir. 1996) 30, 39

Baker v. Firestone Tire & Rubber Co., 793 F.2d 1196 (11th Cir. 1986) 44

Bammerlin v. Navistar Int'l Transp. Corp., 30 F.3d 898 (7th Cir. 1994) 46

Barth v. B.F. Goodrich Tire Co., 265 Cal. App. 2d 228, 71 Cal. Rptr. 306 (1968) 44, 46

Benedi v. McNeil-P.P.C., Inc., 66 F.3d 1378 (4th Cir. 1995) 39

Binakonsky v. Ford Motor Co., 133 F.3d 281 (4th Cir. 1998) 46

Bourjaily v. United States, 483 U.S. 171 (1987) 38

Claar v. Burlington Northern R.R. Co., 29 F.3d 499 (9th Cir. 1994) 20

Compton v. Suburu of America, 82 F.3d 1513 (10th Cir.), *cert. denied*, 117 S. Ct. 611 (1996).. 20, 23, 31

Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993) ..... *passim*

DePaepe v. GMC, 141 F.3d 715 (7th Cir. 1998)..35, 38, 39

Davis v. Six Sixteen, Inc., No. 96-1238, 1997 U.S. App. LEXIS 24038 (4th Cir. Sept. 12, 1997) 29

DeLuca v. Merrell Dow Pharmaceuticals, Inc., 791 F. Supp. 1042 (D.N.J. 1992), *aff'd*, 6 F.3d 778 (3d Cir. 1993) 24

Edwards v. Sears Roebuck and Co., 512 F.2d 276 (5th Cir. 1975) 44

Firestone Tire and Rubber Co. v. Adams, 541 A.2d 567 (Del. 1988) 44

Firestone Tire & Rubber Co. v. Jackson Transp. Co., 191 S.E.2d 110 (Ga. App. 1972) 44

Freeman v. Case Corp., 118 F.3d 1041 (4th Cir. 1997), *cert. denied*, 118 S. Ct. 739, (1998) 22

Garcia v. Columbia Medical Center of Sherman, 996 F. Supp. 617 (E.D. Tex. 1998) 27, 39

Gatlin v. Cooper Tire & Rubber Co., 481 S.W.2d 338 (Ark. 1972) 44

TABLE OF AUTHORITIES—Continued

	Page
General Electric Co. v. Joiner, 118 S. Ct. 512, (1997)	47
Glanzman v. Uniroyal, Inc., 892 F.2d 58 (9th Cir. 1989)	44
Hawthorne v. Michelin Tire Corp., Nos. 95-15742, 95-15743, 1996 U.S. App. LEXIS 29105 (9th Cir. Nov. 5, 1996)	44
Iacobelli Construction, Inc. v. County of Monroe, 32 F.3d 19 (2d Cir. 1994)	22
Johnson v. Michelin Tire Corp., 812 F.2d 200 (5th Cir. 1987)	44
Kannankeril v. Terminix Int'l, Inc., 128 F.3d 802 (3d Cir. 1997)	17, 30, 39, 47
Lawson v. Trowbridge, 153 F.3d 368 (7th Cir. 1998)	37
Marshall v. Arzuaga, 828 F.2d 845 (1st Cir. 1987)	44
McCullock v. H.B. Fuller Co., 61 F.3d 1038 (2d Cir. 1995)	47
McKendall v. Crown Control Corp., 122 F.3d 803 (9th Cir. 1997)	23
In Re Paoli R.R. Yard PCB Litig., 35 F.3d 717 (3d Cir. 1994)	29
Smith v. Uniroyal Inc., 420 F.2d 438 (7th Cir. 1970)	44
Stecyk v. Bell Helicopter Textron, Inc., No. 94-CV-1818, 1998 U.S. Dist. LEXIS 14081 (E.D. Pa. Sept. 8, 1998)	42
Talkington v. Atria Reclamelucifers Fabrieken BV, 152 F.3d 254 (4th Cir. 1998)	46
Torres v. Goodyear Tire & Rubber Co. Inc., No. 94-15092, 1995 U.S. App. LEXIS 20375 (9th Cir. July 13, 1995)	22, 43
Uniroyal Goodrich Tire Co. v. Ford, 461 S.E.2d 877 (Ga. App. 1995)	46
United States v. 14.38 Acres of Land, 80 F.3d 1074 (5th Cir. 1996)	29
United States v. Bighead, 128 F.3d 1329 (9th Cir. 1997)	37

TABLE OF AUTHORITIES—Continued

	Page
United States v. Cordoba, 104 F.3d 225 (9th Cir. 1997)	37
United States v. Hale, No. 96-10358, 1997 U.S. App. LEXIS 26524 (9th Cir. Sept. 23, 1997)	36
United States v. Jones, 107 F.3d 1147 (6th Cir.), *cert. denied*, 117 S. Ct. 2527 (1997)	17, 23, 47
United States v. Ly, Nos. 97-10130, 97-10148, 97-10162, 97-10166, 1998 U.S. App. LEXIS 6060 (9th Cir. Mar. 25, 1998)	37
United States v. Ochoa, No. 96-500007, 1997 U.S. App. LEXIS 13878 (9th Cir. June 9, 1997)	36
United States v. Plunk, No. 96-30363, 1998 U.S. App. LEXIS 21079 (9th Cir. Aug. 28, 1998)	29
United States v. Webb, 115 F.3d 711 (9th Cir.), *cert. denied*, 118 S. Ct. 429 (1997)	37
Viterbo v. Dow Chemical Co., 826 F.2d 420 (5th Cir. 1987)	24
Voohries-Larson v. Cessna Aircraft Co., 177 F.R.D. 462 (D. Ariz. 1998)	42

Statutes, Rules, and Regulations

Federal Rule of Evidence 702	*passim*
Federal Rule of Evidence 703	24, 25
Report of the Advisory Committee on Evidence Rules, May 1, 1998	15, 25-27

Miscellaneous:

Lisa M. Agrimonti, *The Limitations of Daubert and its Misapplication to Quasi-Scientific Experts, A Two-Year Case Review of Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 35 Washburn L. J. 134 (Fall 1995)	37
Margaret A. Berger, *Procedural Paradigms for Applying the Daubert Test*, 78 Minn. L. Rev. 1345 (1994)	38

TABLE OF AUTHORITIES—Continued

Page

Edward J. Imwinkelried, *The Next Step After Daubert: Developing a Similarly Epistemological Approach to Ensuring the Reliability of Non-scientific Expert Testimony*, 15 Cardozo L. Rev. 2271 (April 1994) 22, 31, 47

Webster's New World Dictionary (2d ed. 1980) 19

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v.

PATRICK CARMICHAEL, an individual and father and next of kin to PATRICK CARMICHAEL, JR., a minor, LUZVIMINDA CARMICHAEL, an individual and mother and next friend of CARINA HORN, a minor, and administratrix of the estate of JANICE HORN, CARINA HORN, a minor, LEONA CARMICHAEL, SHAMEELA CARMICHAEL, and NATIMAH CARMICHAEL,
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BRIEF OF RESPONDENTS

STATEMENT

This case involves a products liability claim arising out of a motor vehicle accident involving eight members of the Carmichael family in which all the passengers were injured and one was killed. JA 27. The single vehicle accident was caused by a right rear tire "blow out" on a 1988 Ford Aerostar Minivan that was traveling on Interstate 65 near Mobile, Alabama. JA 27.

Seven surviving members of the Carmichael family and the decedent's representative (Plaintiffs below and Re-

spondents herein), filed a federal diversity lawsuit against Kumho U.S.A., Inc., Kumho Tire Company, Ltd., Hercules Tire & Rubber Company, Inc., and Sam Yang Tires, Inc.[1] (Defendants below and Petitioners herein) for claims under the Alabama Extended Manufacturer's Liability Doctrine (a strict liability statute), negligence/wantonness, and breach of warranty. JA 29, 31-32. In support of their claims, Respondents offered an expert in tire failure analysis, Dennis Carlson, Jr., who expressed the opinion that the right rear tire, which caused the accident, was defective. JA 29. Petitioners challenged the admissibility of the expert testimony under Rule 702, Fed. R. Evid., and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). JA 9. The District Court for the Southern District of Alabama found that it "must consider" *Daubert*'s "general observations" for assessing the reliability of Carlson's tire failure analysis and found that it did not satisfy these criteria. JA 37-43. The district court then excluded the testimony and granted summary judgment for petitioners. JA 46-47. The Court of Appeals for the Eleventh Circuit reversed. Although it agreed that Carlson's testimony must be reliable and relevant to be admissible, the Eleventh Circuit found fault with the district court's assumption that *Daubert*'s "general observations" were appropriate indicia of reliability for all experts. JA 95-104. Thus, the Eleventh Circuit remanded the case for a determination on the record of the appropriate indicia of reliability for assessing Carlson's tire failure analysis. *Id.*

A. The Tire Failure

The accident occurred at 8:45 in the morning on June 6, 1993. JA 21-22. The right rear tire that blew out was a Hercules steel-belted radial, manufactured and

[1] In 1984, Sam Yang Tires, Inc. was merged into Kumho. Defendant Kumho was the surviving corporation; thus, Sam Yang is not an independent corporate entity and is not a separate party to the lawsuit. JA 23, 28 n.3.

designed by Kumho Tire Company, Ltd. in South Korea. JA 22, 23, 28. Mr. Carmichael had purchased the van used on April 30, 1993 in Tacoma, Washington. JA 24. At the time of purchase, the van's odometer registered 88,907 and at the time of the accident three months later it registered 96,008 miles. JA 24. The blow-out resulted from a separation [2] of the tread and the outer steel belt of the tire. JA 413, 419, 431. The carcass of the tire and three sections of the tread were recovered from the accident [hereafter collectively referred to as "the accident tire"]. JA 413.

B. The Tire Failure Analysis

1. *The Question Addressed by the Experts*

Respondents first consulted George Edwards,[3] a tire failure analysis expert, for his evaluation of the cause of the tire failure. JA 419. Although Edwards completed his report and evaluation of the accident tire, he became ill and could not continue in the case. He turned over the case to his associate, Dennis Carlson, Jr., who undertook his own evaluation of the accident tire. JA 96-97, 412-13. In addition, Petitioners hired their own tire failure analyst, Thomas Dodson, to examine the accident tire and submit a report with his conclusions about the cause of the tire blowout. JA 430.

Under Alabama law, Respondents were required to prove that a defect existed in the accident tire, but did not have to prove the specific type of defect, i.e., whether the accident tire failed due to a production or a design defect. JA 44. Thus, each of these three experts performed an evaluation designed to determine only *whether*

[2] A "separation" is a loss of adhesion of component parts of the tire. JA 363.

[3] Edwards is a tire failure expert with decades of experience; Edwards served as president of a Department of Transportation-approved tire testing laboratory, worked for two tire manufacturers, and served as a consultant to Goodyear Tire and Rubber Company. JA 338.

the tire failure was caused by abuse or *a* defect, not to identify a specific defect. JA 412, 419, 430.

2. The Nature of Carlson's Experience

The challenged expert, Carlson, obtained his primary experience in tire failure analysis as a mechanical engineer at Michelin America, Inc. from 1977 to 1987, where he was involved in the design, testing, and development of tires.[4] JA 416-17. At Michelin, Carlson performed "thousands of control failure simulation tests" of tires, JA 110-11, including tests for evaluating steel belt separation, JA 113. He tested and examined hundreds of failed tires that were returned from the field, submitted under warranty claims, or had been subjected to abuse for purposes of design experiments. JA 130-31, 390-91. He was also responsible for test quality, writing test procedures, statistical analysis, and track testing of tires. JA 131-32. While at Michelin, Carlson served as an instructor of a Statistical Process Control course for engineers and operators, and, since leaving, he has taken independent coursework in Tire Failure Forensics at the North Florida School of Police Management and Technology. JA 416, 418.

After leaving Michelin in 1987, Carlson took a position with S.E.A., Inc., a litigation consulting firm, where he primarily worked for industry clients and defendants in litigation. JA 169-70. In 1994, Carlson took a position as a tire consultant and accident reconstructionist with George Edwards, Inc., a consulting firm primarily retained by plaintiffs in litigation. JA 170, 415. Carlson has been qualified by a court to provide expert testimony on tire failure analysis 18 times since 1987; his opinions have never been excluded prior to the district court proceeding in this case. JA 167-68, 175.

[4] While Carlson tested truck and light truck tires, he also participated in the testing of numerous passenger tires. JA 127. Carlson testified and explained that, for purposes of determining the cause of a tire failure, the knowledge and principles applied to light truck tires are highly similar to those applied to passenger vehicle tires. JA 138. This testimony was not rebutted.

3. The Methodology of Tire Failuure Analysis

Each expert, including Defendants' expert, determined that a visual inspection without further independent testing of the accident tire was the most appropriate method to determine the cause of the tire failure. Thomas Dodson, Defendants' expert, stated in his report that he undertook a "visual and tactile examination of the [accident tire] which you provided to me to determine the cause of the unserviceability." JA 430. Likewise, Plaintiffs' original expert, George Edwards, stated that he visually examined the accident tire. JA 419. Carlson similarly stated in his deposition that examination of the accident tire was the primary source for formulating his opinion: he looked at photographs of the accident tire, and confirmed his assessment by examining the accident tire for one hour before his first deposition and for three hours before his second deposition. JA 180-81, 268, 311-12, 347.

None of the three experts performed any destructive tests on the accident tire and none indicated any tests would be necessary or helpful. Dodson, Defendants' expert, testified as follows:

> Q. Did you do any—well, let me ask you this, when you had the tires to examine them, what did you do?
>
> A. Conducted a visual nondestructive examination.
>
> Q. Did you do any x-rays?
>
> A. No, sir.
>
> Q. You visually inspected the tires. You made these pictures. What else?
>
> A. As it relates to these tires, that's it.

JA 425-26. Carlson explained that there are certain cases where destructive testing may be helpful or necessary, but that this was not one of those cases. JA 221-22, 233-35, 268-69, 272-73, 354-58, 372. He further stated that it

can be difficult, through testing, to replicate the factors at work when the vehicle was in use, and often the results are unreliable. JA 222, 234-35, 236. More specifically, such tests would be unreliable when performed on the remains of a blown-out tire. JA 234-35, 236. However, all three experts did look at other available evidence, such as the other three tires from the accident vehicle, photographs of the accident vehicle, the accident report, and the maintenance records of the vehicle. JA 243-44, 421, 430-35.[5]

Carlson testified that the most reliable method of determining the cause of a tire failure in a separation case, such as this, is to examine the accident tire for specific signs of abuse. As Edwards noted, these signs of abuse are "recognized by tire companies, tire experts, recappers, and trackers as important factors for determining tire failure modes." JA 421. While there may be more than one kind of abuse that can cause a tire to separate, as occurred here, the most common form of abuse is overdeflection, a broad term used to describe the running of a tire in an overloaded or underinflated state.[6] JA 115-17. Accordingly, each of the experts focused primarily on overdeflection as the possible cause of the blow-out. Carlson testified that the typical signs of overdeflection would include abnormal tread wear,[7] significant bead

[5] Carlson stated that when assessing the cause of a tire failure, he may use information about the process design from factory equipment techniques or adjustment records to distinguish between a manufacturing defect and design defect, JA 319-20, 437-48. None of the three experts involved in this case found that review of that type of data was required. JA 412-18, 419-22, 430-35.

[6] More specifically, the load deflection curve of a tire is the amount of weight the tire withstands at its inflation pressure. JA 194. As the tire is deflated, the weight that the tire can withstand drops proportionally. *Id.*

[7] The tread is the outer layer of the tire that is in contact with the road and the nature of the tread wear is evaluated as a sign of abuse, as well as of separation. JA 211, 420, 431-32. Overdeflection, the most common form of abuse that causes separation, can result in shoulder wear on the tire that is more severe than center

groove,[8] sidewall deterioration,[9] and marks on the rim flange.[10] JA 210, 276-77. Additionally, Carlson considers whether any previous punctures may not have been repaired properly and could have caused the separation.[11] JA 164-67. If any indications of abuse are found, he evaluates the nature and severity of those signs to form a conclusion about whether they occurred from abuse or some other cause, such as the accident itself. JA 210-11, 277. Carlson testified that he does not presume that a defect occurred unless he finds fewer than two telltale signs of abuse, JA 223-24; if he does find two or more telltale signs of abuse, he concludes that the accident tire did not fail due to a defect. JA 284-86, 383-85, 387. Carlson testified that he often sends back a tire sent to

wear, but it will be a distinct pattern. JA 197, 211. Each expert took tread depth measurements of the tread fragments of the blownout tire to evaluate the wear patterns. JA 287, 420, 433.

[8] The beads of a tire are the non-extensible steel wire loops that anchor the plies and also lock the tire onto the wheel assembly so that it will not slip or rock on the rim. Brief of Steven Bobo, Donald G. Carter, William J. Coad, Ernest L. Daman, John D. Graham, Nathan H. Hurt, A. Alan Moghissi, Francesco Popei, James R. Wallace and Richard Wilson, Addendum Table I at 31. In an abuse scenario such as overdeflection, the bead of the tire is stressed against the rim of the tire, causing significant grooves that appear in both beads of the tire. JA 196-97, 212, 214-15, 257.

[9] Sidewall deterioration occurs when a tire has been under or over-inflated. JA 196. The temperature of the tread increases, causing the rubber to expand and the sidewalls to bend at a greater angle than normal. JA 194-96. Sidewall deterioration is visible on the exterior or interior liner of the tire in the form of circumferential discoloration or deterioration in an abuse scenario. JA 212.

[10] In some abuse situations, there may be well-developed polishing or gummy rubber on the rim flange. JA 213-41.

[11] A puncture that is not adequately repaired can cause tire failure. JA 204, 377. Carlson testified that such a scenario can be readily determined by visual inspection because the puncture hole will show obvious signs of "polishing" if the puncture caused the separation. JA 166-67, 377.

him by a client because he finds that abuse, rather than a defect, caused the tire to fail. JA 210, 384; Appendix A at 3a-4a, *Tillery* Deposition of Dennis P. Carlson, Jr. (3/23/95, 6/7/95), Exh. B to Motion of All Defendants to Exclude Testimony of Plaintiffs' Expert Dennis Carlson and to Conduct Fed. R. Evid. 104(a) Hearing [hereinafter App. A].

The other two experts also inspected the accident tire for the same telltale signs of abuse. For example, Dodson, Defendants' expert, looked at the accident tire for the following indications of abuse: severe bead compression grooves, accelerated tread shoulder rib wear, sidewall abrasions, and the puncture hole. JA 432, 434. Likewise, Edwards described his approach when he examined the accident tire to determine the cause of the failure:

> The analysis of component failure involves determining whether the tire failed due to fracture or fatigue. The tread depth was measured at several points on the tire. This helped to evaluate several possible causes of the tire failure. The bead area was examined to evaluate some forms of abuse which can occur. The sidewall rubber and cords were examined . . . . A puncture which had been repaired was examined and evaluated.

JA 420.

4. *The Application of the Methodology by the Experts*

Prior to becoming ill, Edwards inspected the accident tire. Upon finding no significant abnormal tread wear, bead grooves or sidewall deterioration indicative of abuse, and no indication that the previous puncture of the accident tire had caused the separation, Edwards determined that the accident tire failed due to a "defective adhesion in the tread belts system." JA 419-21. When he became ill, Edwards turned the case over to Carlson. After reviewing the photographs and other available evidence, Carlson came to his own, independent conclusion that the cause of the tire failure was a defect. JA 244-45. Carlson, who has conducted many inspections of failed tires and reviewed photographs of such failures on numerous occasions, inspected the accident tire for one hour before his first deposition on March 7, 1995, and three hours before his second deposition on May 15, 1995 to verify the accuracy of the photographs provided to him by Edwards. JA 180-81, 251-52, 311-12.

Like Edwards, Carlson found no significant evidence of abuse in the tread wear patterns, bead or sidewall of the accident tire.[12] Because of the nature of the compression of a tire when it is either over or under-inflated, Carlson explained that abuse will result in abnormal wear on both shoulders of a tire. *See* Appendix B at 6a-7a, *Carmichael* Deposition of Dennis P. Carlson, Jr. (3/7/95, 5/15/95), Exh. A to Motion of All Defendants to Exclude Testimony of Plaintiffs' Expert Dennis Carlson and to Conduct Fed. R. Evid. 104(a) Hearing [hereinafter App. B]; App. A 1a-2a. Carlson measured the tread depth circumferentially and inspected the nature and pattern of treadwear on the tire fragments. JA 287. He found that on the whitewall shoulder of the accident tire, there was more wear on the shoulder than the center (a variance from 3/32″ to 0″), but found that the tread depth on the blackwall shoulder of the accident tire was fairly constant and did not show more wear than the center. JA 286-87. Furthermore, Carlson observed that the other three tires of the vehicle did not have significant abnormal tread wear indicative of abuse. JA 290, 296-97; App. B 9a-11a. For example, although Carlson found some evidence of treadwear on the front tires, he explained that such wear was different from that of the accident tire, and

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[12] Carlson looked primarily for evidence of overdeflection, the most common form of abuse. JA 115. While he did acknowledge that there are other potential forms of abuse that may lead to separation, such as consistently driving curves at high speed or impact damage, he explained that they are either not seen on passenger cars or have not been proven as causes of separation. JA 115-16.

that it was most likely a result of improper alignment or characteristics of suspension. JA 297. Thus, Carlson concluded that the accident tire did not evidence signs of abnormal tread wear caused by abuse.

Carlson explained that abuse would cause bead impressions on both sides of the accident tire, not only on one side. JA 257. He testified as follows:

> Q. Can you have bead groove impression on one side of the tire but not on the other in an over-deflection situation?
>
> A. Generally not.
>
> Q. You said generally not; can you in any circumstance?
>
> Q. I haven't seen it. Yet if you had a suspension that caused the tire to lean a considerable amount then it's theoretically possible that you would have that. But—
>
> Q. Do you know if that exists on this van.
>
> A. It does not exist. It's a solid rear axle in the rear.

JA 257-58. Carlson observed that the bead groove on the blackwall side of the accident tire showed no significant impression, although the bead on the whitewall side of the accident tire did show damage and a significant bead impression. JA 256-57. Finally, Carlson noted that the damage on the whitewall rim flange would have been caused by the force applied to the tire in the accident itself, after the separation had occurred. JA 256-57.

As Carlson explained, sidewall deterioration occurs when a tire has been under or over-inflated. J.A 196. Sidewall deterioration is visible on the outside or interior liner of the tire in the form of circumferential discoloration or deterioration in an abuse scenario. JA 212. Carlson examined the accident tire for evidence of sidewall deterioration in the form of discoloration or deterioration of the inner or outer liner, and found none. JA 299, 302-03. In fact, he noted that it was significant that "the inner liner is

in very good shape. Many times you'll see the discoloration in the inner liner before you will on the outside." JA 305-06.

Carlson noted that the accident tire had a puncture hole that had been adequately patched and concluded that it did not contribute to the cause of the separation. JA 258-61. He explained that if a puncture hole is a cause of separation, there will be obvious signs of "polishing" around the puncture hole, which were not evident upon examination. JA 258-59; App. B 13a. Carlson further testified that in his own experience he had observed such "polishing" around the puncture hole in other tires and had recently inspected such a tire in another case. In that instance, he concluded that it failed due to abuse, not a defect. *See* App. B 13a. At his deposition, Petitioners' counsel asked Carlson if he saw any "hole" in the exterior tread. While Carlson acknowledged that there was a small hole in the rubber, it was very shallow, undeveloped and thus he did not assign significance to it. JA 322. Furthermore, Carlson did not indicate that there was any "polishing" around the small hole. In Carlson's opinion, a puncture of the accident tire could not have caused the separation.

In order to further rule out abuse, Carlson evaluated other available evidence as part of his tire failure analysis. Carlson reviewed witness statements, the maintenance records for the vehicle, and photographs of the van and the accident scene. JA 180-83, 243-44, 247-48, 312. In addition, he examined the other three tires from the vehicle. Carlson found that the left rear tire was close to being worn out, but that the difference between the treadwear and the shoulder and the center of the tire was not significant. App. 8a-10a. He further pointed out that the accident tire showed sharp edges on the shoulder as opposed to the rounded edges observed on the shoulder of the other rear tire. App. B 7a-10a, 12a. Carlson found that neither of the front tires showed the wear

pattern found on the accident tire. App. B 10a-12a. Each did show somewhat more wear on the shoulder than the center, but Carlson explained that this was caused by front axle wear. JA 297.

Based on his review and evaluation of the accident tire, the other three tires from the vehicle, the maintenance records from the vehicle, witness statements, and photographs of the accident scene and the van, Carlson concluded that there were no significant signs of abuse on the accident tire and that its failure was caused by a defect.[13]

C. The District Court Opinion

Several months after the conclusion of Carlson's deposition, Petitioners moved to exclude his testimony, relying on Rule 702 and *Daubert*. JA 9. Specifically, Petitioners argued that Carlson's testimony was "unscientific and unreliable" because his methodology and opinions could not satisfy the "general observations" set forth in *Daubert*. *Id*. Noticeably absent from Petitioners' motion was any record evidence of an appropriate method of tire failure analysis, despite the fact that their own tire failure expert had been fully deposed and had issued a report of his findings. Petitioners also moved for summary judgment on the grounds that without Carlson's testimony, Respondents had no other evidence of a defect in the tire and thus could not recover under Alabama law. JA 7.

The district court declared that it had a gatekeeper role in assessing reliability and relevancy for all expert testimony, but concluded that it "must consider" the four "general observations" set forth in *Daubert* for this purpose. JA 36-37. In its decision, the district court assumed that Carlson was qualified to offer expert testimony

[13] Although Dodson, Defendants' expert, evaluated the same telltale signs for abuse on the accident tire as Carlson, and engaged in the same methodology of tire failure analysis, he concluded that the failure was caused by abuse. JA 430-35.

on the cause of the tire failure, and focused on whether his methodology could pass muster under *Daubert* and Rule 702. JA 33. Additionally, the district court found no inherent flaw in Carlson's method of analysis: eliminating factors of abuse and, finding no significant signs, concluding that the accident tire could only have failed because of a defect. JA 36 n.7. However, the district court proceeded to apply each of *Daubert's* "general observations" and found that Carlson's opinion did not satisfy them. JA 37-40. The district court did not consider any additional or alternative indicia of reliability regarding Carlson's tire failure analysis, nor did it find any merit in Respondents' arguments that *Daubert*'s "general observations" were inapplicable to Carlson's tire failure analysis because it was not "scientific" in nature. JA 41-43. The district court accorded no significance to Respondents' argument that Defendants' expert, Thomas Dodson, had engaged in the same tire failure analysis as Carlson. JA 41. Because it determined that Carlson's testimony was not admissible under *Daubert*'s four "general observations," the district court granted both the motion to exclude and the motion for summary judgment. JA 46-47.

Respondents moved for reconsideration of the district court's opinion, arguing that Carlson's methodology was appropriate to the inquiry of whether the accident tire failed due to a defect or abuse, that the four "general observations" set forth in *Daubert* were not the appropriate factors to determine the reliability of every kind of expert testimony, and that other indicia of reliability established that the testimony was admissible under *Daubert* and Rule 702. JA 48, 59-75. The district court summarily rejected Respondents' arguments. It concluded that the additional factors offered by Respondents as appropriate indicia of reliability to assess Carlson's methodology were of "dubious merit." JA 90 n.1. The court assumed that *Daubert's* "general observations" provided the only proper framework for assessing reliability and

concluded there were no countervailing factors operating in favor of admissibility that could outweigh those identified in *Daubert*. JA 91. The district court again found that Carlson did not meet any of *Daubert*'s "general observations," noting that record evidence of Dodson's tire failure analysis provided no support for the "scientific basis" for Carlson's analysis, and was thus unhelpful. JA 93. Accordingly, the district court affirmed its prior decision. JA 94.

D. The Eleventh Circuit Opinion

The Eleventh Circuit reviewed *de novo* the district court's legal conclusion that it must apply *Daubert*'s "general observations" to Carlson's tire failure analysis and its decision to exclude the expert testimony for abuse of discretion, and reversed. JA 96, 99. The Eleventh Circuit recognized that *Daubert* established a requirement under Rule 702 that the trial judge act as a gatekeeper in establishing a threshold showing of reliability and relevancy for all expert testimony. JA 102-03. However, the Eleventh Circuit further held that the criteria for evaluating an expert's reliability are "flexible" and will vary based on the nature of the expertise. JA 98 n.4. The Eleventh Circuit determined that the four "general observations" set forth in *Daubert* provided a method for evaluating the reliability of witnesses who claimed scientific expertise. JA 99. Focusing on the nature of the expertise by comparing the application of scientific principles with skill or experience-based observation, the Eleventh Circuit found that alternative indicia of reliability were necessary to determine the reliability of Carlson's tire failure analysis. JA 102-04. For example, the Eleventh Circuit pointed out that both Carlson and Defendants' expert, Dodson, relied on the existence and relevance of the same markings on the accident tire for their analyses. JA 102 n.8. Thus, the Eleventh Circuit remanded the case to the district court for a determination of the admissibility of the

opinion at issue in accordance with factors appropriate to the nature of the expertise. JA 103-04.

SUMMARY OF ARGUMENT

I. The overarching purpose of Rule 702 of the Federal Rules of Evidence and *Daubert* is to enable district courts to ensure that expert opinion testimony is sufficiently reliable and relevant to assist the jury in resolving disputed issues of fact. To accomplish this, the district judge is charged with the "gatekeeper" authority to assure reliability of each expert opinion. The emphasis of the reliability inquiry is on the principles and methodologies applied by the expert, not the conclusions generated. The reliability threshold must be established for any challenged expert whether he or she be testifying on the basis of scientific, technical, or specialized knowledge.

In applying this reliability requirement to the particular scientific expertise at issue in *Daubert*, the Court set forth general observations that might assist the district courts in determining "whether the reasoning or methodology underlying the testimony is scientifically valid . . . ." 509 U.S. at 592-93. Although the Court offered four "general observations," it recognized that many factors might bear on the reliability of scientific testimony and, therefore, that the "general observations" are neither "a definitive checklist" nor a rigid "test." *Id.* at 593.

Daubert, its application by the lower courts, and most recently the Federal Rules of Evidence Advisory Committee, recognize that the reliability inquiry under Rule 702 must be based on indicia of reliability drawn from the particular discipline at issue. The Advisory Committee has noted that "the relevant factors for determining reliability will vary from expertise to expertise," and that "some types of expert testimony . . . will have to be evaluated by reference to other standard principles attendant to the particular areas of expertise." Appendix C Report of the Advisory Committee on Evidence Rules, May 1,

1998. These authorities recognize that the *Daubert* "general observations" cannot be universally applied to all experts and would result in the widespread exclusion of experts in fields long accepted by the courts simply because they cannot satisfy criteria not relevant to their field.

The district court below erred by applying the *Daubert* "general observations" to plaintiffs' tire failure expert, without regard to the methodologies and principles used in that field. The Eleventh Circuit reversed, correctly finding that *Daubert*'s "general observations" did not apply and remanding the case for an assessment of the expert's reliability in accordance with factors used in the expert's field. Such a "one size fits all" approach to the choice of reliability criteria as taken by the district court here, and advocated by the petitioners for every type of expert testimony, would yield arbitrary results in the admissibility of expert testimony in the district courts.

II. A determination by the district court judge of the reliability of expert opinion must reflect the indicia of reliability appropriate to that field, with particular attention given to the methodologies and principles utilized in the discipline. The source of such information to assist the gatekeeper's admissibility determination must be record evidence in the form of expert opinion or other materials grounded in the discipline at issue, not arguments of counsel.

The proponent of the expert opinion must establish a *prima facie* case of reliability based on this record evidence and a challenge to it must establish, also on the basis of record evidence, that the expert failed to apply recognized methodologies or principles in the discipline to reach his or her opinion. The record here contains probative evidence regarding the methodologies and principles of tire failure analysis that was not amenable to review under *Daubert*'s "general observations." Therefore, the Eleventh Circuit's remand for record review under appropriate reliability standards should be affirmed.

ARGUMENT

I. RULE 702 REQUIRES THAT THE ADMISSIBILITY OF EXPERT OPINIONS BE BASED ON INDICIA OF RELIABILITY DRAWN FROM THE PARTICULAR DISCIPLINE AT ISSUE.

In *Daubert*, this Court interpreted Rule 702 [14] of the Federal Rules of Evidence as requiring that admissible expert scientific testimony be reliable as well as relevant to a disputed issue. *Daubert*, 509 U.S. at 589. The reliability requirement was intended to ensure that, by being based on "what is known," the expert's opinions will be sufficiently trustworthy to aid the trier of fact. *Id.* at 590 & n.9. Essentially, the reliability requirement defines the relationship between an expert's opinions and the knowledge on which they are based. Since expert testimony that is admitted pursuant to Rule 702 must, by operation of the Rule, be based on "knowledge [that] will assist the trier of fact," the trial court's gatekeeping role for assessing reliability will inevitably apply to all expert testimony that is covered by the Rule. *Kannankeril v. Terminix Int'l., Inc.*, 128 F.3d 802, 806 (3d Cir. 1997) ("it is the role of the trial judge to act as a 'gatekeeper' to ensure that any and all expert testimony or evidence is not only relevant, but also reliable"); *United States v. Jones*, 107 F.3d 1147, 1156 (6th Cir.), *cert. denied*, 117 S. Ct. 2527 (1997) ("although *Daubert* dealt with scientific experts, its language relative to the 'gatekeeper' function of federal judges is applicable to all expert testimony offered under Rule 702") (citations omitted).

In applying this reliability requirement to the particular scientific expertise (teratology) in *Daubert*, the Court set

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[14] Rule 702, Fed. R. Evid., provides: "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise."

forth "general observations" that might assist the district courts in determining "whether the reasoning or methodology underlying the testimony is scientifically valid . . . ." 509 U.S. at 592-93. Although the Court offered four "general observations,"[15] it recognized that many factors might bear on the reliability of scientific testimony and, therefore, that the "general observations" constituted neither "a definitive checklist" nor a rigid "test."[16] *Id.* at 503. In contrast to the benchmark of reliability, which was set forth by the Court without qualification and which must apply universally because of its direct relationship to the knowledge on which experts must rely, these "general observations" were described as non-exclusive and were derived from observations about the specific nature of the scientific inquiry then before the Court.[17] The determination of whether a technique or method can be tested, for example, is attributed to a way of thinking that "distinguishes science from other fields

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[15] These "general observations" were:

1. Whether the method or technique used by the expert in formulating her opinions can be tested;

2. Whether the method or technique has been published or otherwise subjected to peer review;

3. Whether a rate of error is discernable from the method or technique on which the expert relied; and

4. Whether the method or technique on which the expert relied has gained "general acceptance" within the expert's community.

Daubert, 509 U.S. at 593-94.

[16] Indeed, the Court referred generally to other sources of factors that might advance a district court's reliability determination and, while declining to pass on the merit of any other factors, the Court allowed that one or more of them may also warrant attention. *Id.* at 594 n.12.

[17] While acknowledging that Rule 702 applies to experts who rely on knowledge that is technical and otherwise specialized, *Daubert* expressly limited the reach of its discussion to the "scientific context" because the field of teratology at issue there was of a scientific nature. *Daubert*, 509 U.S. at 590 n.8.

of human inquiry." *Id.* at 593 (quoting E. Green and C. Nesson, *Problems, Cases, and Materials on Evidence* 645 (1983)). Similarly, the error rate factor is supported by citations to cases involving spectrographic analysis, an activity that can only be characterized as scientific in nature.[18] *Id.* at 594 (citing *United States v. Smith*, 869 F.2d 348, 353-54 (7th Cir. 1989) and *United States v. Williams*, 583 F.2d 1194, 1198 (2d Cir. 1978)). Moreover, the Court's "general observations" about publication and general acceptance, while not described as necessary to establish reliability, were associated by the Court with sound scientific practice. *Daubert*, 509 U.S. at 593-94. By the very manner in which the Court described these "general observations," therefore, it is apparent that they were intended to constitute a set of considerations bearing on the validity of the scientific testimony at issue, but that the Court did not purport to set forth an exhaustive list of indicia of reliability for all scientific experts, much less all types of experts.

Given the circumscribed manner in which the *Daubert* Court derived and described the "general observations" and the non-exclusive manner in which they were to be applied, district courts could, at the outset of any reliability determination, fairly be expected to decide which factors would be appropriate to the particular opinions being offered and the knowledge on which they purported to rely. Rather than apply the "general observations" automatically or in a wooden fashion that arbitrarily engrafts them onto all cases and for all types of experts, the district courts were instructed to undertake a "flexible" inquiry. *Id.* at 594.

Failing to heed this guidance, however, the district court below made unsupported assumptions about the body of knowledge on which the Plaintiffs' expert relied, concluded

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[18] A spectrograph is defined as "an instrument for dispersing light radiation into a spectrum and recording the spectrum photographically." Webster's New World Dictionary (2d ed. 1980).

that the proffered opinions were scientific in nature, and applied *Daubert*'s "general observations" automatically and exclusively, without regard for the factors that ordinarily determine reliability in the expert's particular discipline. Petitioners seek to compound this error by urging the universal application of the "general observations" which, as the Chief Justice observed, were never formulated in the context of deciding the admissibility of particular testimony and, therefore, were "vague and abstract." *Daubert*, 509 U.S. at 598-99 (Rehnquist, C.J., concurring in part and dissenting in part).

A. The Eleventh Circuit Was Guided by Rule 702 and the Teaching of *Daubert* in Rejecting the Automatic Application of the "General Observations" Set Forth in *Daubert* and Remanding the Case for an Assessment of the Expert's Reliability in Accordance With Factors From His Discipline.

The Eleventh Circuit correctly recognized that the "general observations" identified in *Daubert* for assessing the reliability of expert scientific testimony do not necessarily apply to all expert disciplines. JA 99. Finding that the district court erred in its automatic application of *Daubert*'s "general observations," the court of appeals properly remanded the case to the district court to determine the admissibility of the opinions at issue in accordance with factors appropriate to the nature of the expertise at issue.[19] JA 102-04. While rejecting the wooden invocation of *Daubert*'s "general observations," the Eleventh Circuit directed that, in determining the admissibility of opinions from a tire failure expert, the district court be guided by

[19] The Eleventh Circuit properly reviewed *de novo* the district court's selection of *Daubert's* "general observations" as the standard by which to determine the admissibility of Carlson's expert opinions. JA 99. *See Claar v. Burlington Northern R. R. Co.*, 29 F.3d 499, 500-01 (9th Cir. 1994) (district courts' interpretation of Federal Rules of Evidence will be subject to *de novo* review); *Compton v. Suburu of America*, 82 F.3d 1513, 1517 (10th Cir.), *cert. denied*, 117 S. Ct. 611 (1996). (same).

the same fundamental calculus that guided this Court in *Daubert*: "to determine if [the expert's] testimony is sufficiently reliable and relevant to assist a jury." JA 103. *Cf. Daubert*, 509 U.S. at 589. Indeed, the court of appeals explained that the "inapplicability of *Daubert* should not end the day regarding Carlson's reliability," and returned the case to the trial court for it to make that determination.[20] JA 103. At the same time that the Eleventh Circuit rejected the exclusive and automatic application of *Daubert*'s "general observations," it commended to the district court the more general reliability standard established by *Daubert* to guide the inquiry on remand.[21]

[20] The Eleventh Circuit referred interchangeably to the *Daubert* decision itself and to the Court's "general observations" in rejecting the automatic application of the "general observations" to the field of tire failure analysis. *Compare* JA 102 ("we conclude that Carlson's testimony falls outside the scope of *Daubert* . . .) *with* JA 104 ("The district court erred as a matter of law in applying the *Daubert* criteria to the Carmichaels' proffered expert testimony."). It is clear, however, that the court of appeals was only rejecting application of the *Daubert* "general observations," not the decision in its entirety. The circuit court's specific direction that, on remand, the district court determine whether Carlson's testimony was "sufficiently reliable and relevant to assist a jury" makes clear its understanding that *Daubert*'s requirement of a reliability threshold applies to all experts. JA 103.

[21] During a review of the indicia of reliability applicable to a particular discipline at issue, one or more of *Daubert*'s "general observations" may be appropriate to that field and properly be given consideration in the reliability determination. But, that is unlikely here. It is apparent from the district court's efforts to apply *Daubert*'s "general observations" to Carlson's testimony that they are ill-suited to this field. Carlson's testimony was found wanting, for example, because there were no tests applicable to his analysis. JA 37-38. The district court concluded, therefore, that his methodology failed to satisfy the first *Daubert* factor because it was not susceptible to testing. *Id.* As we later explain, however, neither the Plaintiffs' expert nor the learning in the field of tire failure analysis supports a requirement for testing. *See infra* at 29, 41-43.

In taking this action, the Eleventh Circuit was faithful to the underlying approach taken in *Daubert*. Faced with a dispute over the admissibility of testimony that relied on the discipline of teratology in *Daubert*, this Court properly focused its inquiry on factors that bore on the scientific validity of the proffered opinions. *Daubert*, 509 U.S. at 583, 590 & n.8. The Eleventh Circuit returned the case to the district court for the same kind of inquiry into the reliability of the expert's testimony—an inquiry that draws upon factors having currency in the discipline on which the expert has relied.[22]

Other courts and legal scholars[23] are in accord with the Eleventh Circuit's recognition that the *Daubert* "general observations" cannot be applied universally to all experts. *See, e.g., Torres v. Goodyear Tire & Rubber Co., Inc.*, No. 94-15092, 1995 U.S. App. LEXIS 20375 (9th Cir. July 13, 1995) (introduction of testimony by expert on defect in tire upheld based on expert's experience in tire industry and examination of tire at issue); *Jacobelli Contruction, Inc. v. County of Monroe*, 32 F.3d 19, 2425 (2d Cir. 1994) (*Daubert* factors do not apply to geotechnical experts testifying about site conditions and contract requirements in breach of contract action); *Freeman v. Case Corp.*, 118 F.3d 1011, 106-7 (4th Cir. 1997), *cert. denied*, 118 S. Ct. 739, (1998) (mechanical

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22 The Eleventh Circuit offered guidance to the district court by suggesting indicia of reliability, drawn from the record, that may be considered on remand in assessing the reliability of Carlson's proffered testimony. For example, the court of appeals noted that Carlson and Dodson, Defendants' expert, relied on the existence and relevance of the same markings on the accident tire for their tire failure analyses. JA at 102 n.8.

23 *See* Edward J. Imwinkelreid, *The Next Step After Daubert: Developing a Similarly Epistemological Approach to Ensuring Reliability of Nonscientific Expert Testimony*, 15 Cardozo L. Rev. 2271, 2284-85 (1994) (criticizing the specific "general observations" of *Daubert* as "useless as a criterion for the admissibility of other types of expert testimony").

engineer not subject to *Daubert*); *Jones*, 107 F.3d at 1158 (*Daubert* factors do not apply to handwriting analyst); *McKendall v. Crown Control Corp.*, 122 F.3d 803, 806-08 (9th Cir. 1997) (mechanical engineer was not subject to *Daubert* factors, but was qualified as expert by virtue of engineering experience and investigation of hundreds of forklift accidents); *Compton*, 82 F.3d 1516-19 (aerospace and mechanical engineer testifying about design defects and alternative designs not subject to *Daubert* factors). For example, in a case involving the admissibility of expert testimony on handwriting analysis, the Sixth Circuit noted that "handwriting examiners do not concentrate on 'proposing and refining theoretical explanations about the world' ", rather, they "use their knowledge and experience to answer the extremely practical question of whether a signature is genuine or forged." *Jones*, 107 F.3d at 1157. Accordingly, the court determined that *Daubert*'s "general observations" could not be extended to handwriting analysis. *Id.* at 1158.

B. The Federal Rules of Evidence and the Rationale for a Proposed Amendment to Rule 702 Confirm That the Reliability Inquiry Must Be Based on Factors Appropriate to the Expert's Particular Discipline.

The foundation and structure of the Federal Rules of Evidence governing expert testimony, as well as the rationale for a recently proposed amendment to Rule 702, confirm that a reliability determination must be based upon factors applicable to the expert's particular field and not, as Petitioners urge, upon the universal application of *Daubert*'s "general observations."

1. *The Federal Rules of Evidence Governing Expert Witnesses Demonstrate That Reliability Depends Upon Factors Applicable to the Expert's Particular Discipline.*

The very foundation of Rule 702 is rooted in the expectation that the admissible opinions of an expert must

satisfy reliability standards prevailing within the expert's particular discipline. As an exception to the general rule that witnesses must confine their testimony to matters of which they have first-hand knowledge, the admission of expert testimony requires other means of ensuring that the sources of information on which the expert depends are reliable. *See Daubert*, 509 U.S. at 592 (citing Advisory Committee Notes to Fed. R. Evid. 602). As the Court explained in *Daubert*, the admission of testimony that comes from sources other than personal knowledge must have "a reliable basis in the knowledge and experience of [the expert's] discipline." 509 U.S. at 592. The rationale for the admission of expert tetimony under Rule 702, therefore, rests upon the assumption that the testimony will have a "reliable basis" in the particular discipline at issue. Accordingly, the admissibility of expert testimony depends upon reliability factors that arise from and are rooted in discrete disciplines, rather than upon common factors that presumptively apply to all disciplines.

Federal Rule of Evidence 703 likewise focuses on the discipline or field of expertise for the ground rules for determining the type of information on which experts may rely for their opinions. The Rule provides that experts may rely upon facts or data which lack sufficient indicia of reliability to be admissible, such as hearsay evidence, if experts in the particular field reasonably rely upon them. Thus, Rule 703 already requires the district courts to determine an expert's particular field and the knowledge and experience on which experts in that field reasonably rely. *See Viterbo v. Dow Chemical Co.*, 826 F.2d 420, 423 (5th Cir. 1987) (expert testifying to cause of plaintiff's depression failed to take into account family history and drug use on which practitioners in that field ordinarily rely); *DeLuca v. Merrell Dow Pharmaceuticals, Inc.*, 791 F. Supp. 1042, 1059 (D.N.J. 1992), *aff'd*, 6 F.3d 778 (3d Cir. 1993) (expert was excluded because opinions were based on preliminary

drafts of studies, another expert's unpublished reanalysis and his own unpublished reanalysis, none of which were of the type upon which experts in the field reasonably rely.). It would be incongruous and inconsistent for the admissibility of expert testimony under Rule 702 to depend on the application of general reliability factors not derived specifically from the expert's field while Rule 703 expressly requires careful examination of the types of information normally used in discrete fields in determining the knowledge and experience on which experts may rely for their opinions.

2. *The Advisory Committee on Evidence Rules Recently Recommended an Approach to Assessing Reliability That Is Guided by the Nature of the Discipline at Issue.*

Recently, the Advisory Committee on Evidence Rules of the Judicial Conference of the United States expressed support for reliability determinations that are drawn from factors within an expert's discrete discipline. *See* Appendix C, Report of the Advisory Committee on Evidence Rules, May 1, 1998 [hereinafter App. C]. The Advisory Committee reviewed many of the lower court decisions interpreting *Daubert* and offered an analysis that accompanies the proposed Rule revisions. In addition to recommending revisions to Rule 702 that would expressly incorporate the *Daubert* benchmark of reliability, it also concluded that "*the relevant factors for determining reliability will vary from expertise to expertise.*" App. C 21a (emphasis added). The Advisory Committee expressly rejected both the kind of automatic application of *Daubert*'s "general observations" in which the district court engaged below and the universal application of these factors that the Petitioners advocate here. *Id.*[24] As the Advisory Committee explained in the accompanying Committee Note:

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[24] Several amici who support the Petitioners have endorsed a reliability analysis that is based on factors derived from discrete

Some types of expert testimony will be more objectively verifiable, and subject to the expectations of falsifiability, peer review, and publication, than others. *Some types of expert testimony will not rely on anything like a scientific method, and so will have to be evaluated by reference to other standard principles attendant to the particular area of expertise.* The trial judge in all cases of proffered expert testimony must find that it is properly grounded, well-reasoned, and not speculative before it can be admitted.

* * *

While the terms "principles" and "methods" may convey one impression when applied to scientific knowledge, they remain relevant when applied to testimony based on technical or other specialized knowledge. For example, when a law enforcement agent testifies regarding the use of code words in a drug transaction, the principle used by the agent is that participants in such transactions regularly use code words to conceal the nature of their activities. The method used by the agent is the application of extensive experience to analyze the meaning of the conversations. So long as the principles and methods

disciplines and rejected the universal application of the "general observations" set forth in *Daubert*. *See* Brief for the United States at 18 ("The Court's 'general observations' respecting the four factors identified in *Daubert* simply provide illustrative examples of pertinent considerations and are not meant to displace the trial judges' traditional discretion to determine what factors are germane in a particular case"); Brief of the American Tort Reform Association, American Consulting Engineers Council, and National Association of Manufacturers at 3 ("*Amici* submit that all expert opinion must be so evaluated using guidelines appropriate to the discipline involved"). More specifically, an amicus brief on behalf of, *inter alia*, engineers explicitly acknowledges that "[w]hen dealing with the field of engineering or other technical disciplines, one or more of the *Daubert* criteria may not be appropriate," using publication and peer review as examples that may not be customary. Brief of Steven N. Bobo, Donald G. Carter, William J. Coad, Ernest L. Daman, John D. Graham, Nathan H. Hurt, A. Alan Moghissi, Francesco Pompei, James R. Wallace and Richard Wilson at 13.

are sufficiently reliable, and so long as the proponent demonstrates that these principles and methods are applied reliably to the facts of the case, this type of testimony should be admitted.

App. C 21a-22a (emphasis added). The flexible approach set forth in *Daubert*, not the universal and automatic application of the "general observations" urged by the Petitioners, makes sense and properly reflects the spirit and letter of Rule 702 and of *Daubert* itself.[25]

C. The Use of *Daubert*'s "General Observations" in This Case Reveals Their Shortcomings When They Are Applied in a Universal and Mechanical Manner.

The district court asked the wrong question at the outset of its reliability determination and then relied on the answer to that question to apply factors for assessing reliability that had no relevance to the discipline of tire failure analysis. Judged by such inappropriate measures, it is not surprising that the district court excluded the testimony of Carlson, Plaintiffs' expert. Therefore, the Eleventh Circuit acted properly, albeit for reasons that are not universally helpful, *see infra* at p. 35, by remanding the case for a reliability determination not constrained by the *Daubert* "general observations."

Rather than inquire initially about the specific discipline in which Carlson's work was based and identify the indicia of reliability that were appropriate to that discipline, as Rule 702 and *Daubert* warrant, the district court was persuaded by Petitioners to presume that the "general observations" applied to and controlled the ex-

[25] *Daubert*, 509 U.S. at 594; *Garcia v. Columbia Medical Center of Sherman*, 996 F. Supp. 617, 627 (E.D. Tex. 1998) (recognizing that although doctor's testimony about clinical and ethical responsibilities of doctors, nurses, hospitals, and their employees was not based on independent tests or scientific study, the opinions were reliable in light of alternative indicia of reliability).

pert's opinions regarding tire failure analysis.[26] JA 36-37. When Respondents challenged the application of *Daubert*'s "general observations" to disciplines, like tire failure analysis, the district court presumed, without any empirical basis, that tire failure analysis "is necessarily grounded in some scientific foundation" and, therefore, persisted in applying the "general observations." JA 43. The Eleventh Circuit, however, properly instructed the district court on remand to conduct a reliability determination that relies upon indicia of reliability drawn from the field of tire failure analysis.

1. *Unless an Expert's Field Warrants Application of* Daubert's *"General Observations," the Reliability Determination That Ensues Will Be Arbitrary.*

The shortcomings of applying *a priori* the *Daubert* "general observations" to Carlson's testimony, before the court inquired about particular indicia of reliability in his field, are evident from even a cursory review of the district court opinion.

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[26] Regardless of whether tire failure analysis can properly be characterized as science or not, the district court erred by concluding that it "must consider" the *Daubert* "general observations." JA 36-37. *Daubert* was clear in describing the "general observations" as neither a "definitive checklist or test" for assessing reliability, even for all opinions grounded in science. 509 U.S. at 593. Nonetheless, once the district court concluded that Carlson's tire failure analysis was grounded in science, it mistakenly believed that it had to apply the "general observations." It is the discretion of the district courts to decline to invoke the "general observations" that is fundamentally at issue in this case, not the differences between the district court and the Eleventh Circuit as to how to categorize the knowledge on which Carlson relied. For this reason, the question presented for review by the Petitioners is of little assistance. Apart from mischaracterizing the field at issue as engineering, the Petitioners' question presented asks whether "a trial judge *may* consider" the "general observations" set forth in *Daubert*. *See* Brief for Petitioners, at (i) (emphasis added). Of course the district courts may consider the "general observations"; the issue here is whether the courts *must* consider the "general observations" and only them.

In applying the first "general observation," the district court faulted Carlson for using a method that was "not susceptible to testing or falsification." JA 37-38. The district court was skeptical of the subjective nature of Carlson's methodology and of the fact that there were no chemical tests that he could have applied to the accident tire that would have yielded results appropriate to his inquiry in this case. *Id.* Yet, the district court failed to identify record evidence showing whether chemical tests are ordinarily used in tire failure analysis, whether a significant number of practitioners of tire failure analysis regard their methods as subjective, and ignored the fact that Defendants' expert likewise did no testing. Certainly, subjectivity itself is not a universal basis upon which to exclude opinions formulated from that method. A wide variety of experts, among them physicians, appraisers and human resource specialists, inevitably have subjective dimensions in the methodologies they use.[27] Without addressing these unanswered questions, the district court was ill-equipped to determine whether testability is a factor that has any rational relationship to reliability in the field of tire analysis.

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[27] *See United States v. 14.38 Acres of Land*, 80 F.3d 1074, 1078-80 (5th Cir. 1996) (real estate appraiser who based opinions regarding value of land on inspection of property and his experience in field offered reliable expert testimony); *In Re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 758 (3d Cir. 1994) ("Unfortunately, most of the *Daubert* factors—testability, general acceptance, peer review, and degree of production of errors . . . are of only limited help in assessing whether the methodologies" of physicians are reliable.); *United States v. Plunk*, No. 96-30363, 1998 U.S. App. LEXIS 21079, at *8-11 (9th Cir. Aug. 28, 1998) (finding *Daubert* factors inapplicable to expert testifying on drug trafficking and jargon used in that field); *Davis v. Six Sixteen, Inc.*, No. 96-1238, 1997 U.S. App. LEXIS 24038, at *12-14 (4th Cir. Sept. 12, 1997) (permitting executive of baseball team to testify that, based on his years of experience with professional baseball, plaintiff's lost playing time prevented him from signing contract and from receiving $1.8 million for the season; testimony was not the type of evidence "that must pass *Daubert* muster").

Routine application of the second *Daubert* "general observation", that the theory has been subjected to peer review and publication, was equally hazardous here. Although the district court faulted Carlson for failing to cite any publications that approve of his method of visually inspecting failed tires, its failure to evaluate the evidence about the accepted practices in this field renders its judgment infirm.[28] JA 38-39. Even if we were dealing with a discipline in which publication was widespread, which is not the case here, *Daubert* cautioned that publication "is not a *sine qua non* of admissibility." *Daubert*, 509 U.S. at 593. Not surprisingly, there are a host of disciplines for which courts have recognized that the publication requirement is inapplicable.[29] The district court failed altogether to acknowledge *Daubert*'s limitation on the significance of publication as an indicia of reliability, and the extent to which courts have found the factor inapplicable in a number of disciplines.

Similarly, the third "general observation" that the district court considered, the known or potential error rate

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28 The district court failed to note, for example, that much of tire analysis is performed by manufacturers, such as Michelin, for which Carlson earlier worked, and that the methods may have been proprietary and, therefore, never published. JA 178. The absence of publications supporting visual inspections of failed tires, in that event, would hardly be probative of reliability in this case.

29 *See, e.g., Kannankeril*, 128 F.3d at 809 (where toxic effects of chemical agent are well known, doctor relying on such information to reach causation judgment need not publish on the toxicology of the chemical at issue); *Ambrosini v. Labarraque*, 101 F.3d 129, 136 (D.C. Cir. 1996) (doctor noted two reasons: lack of novel issue, and withdrawal of product from market, to explain why there was no reason to publish his findings on a particular poisoning case). In fact, Petitioners' own amici concede that the field of engineering often will not involve publication or peer review. *See* Brief Amicus Curiae of Steven N. Bobo, Donald G. Carter, William J. Coad, Ernest L. Daman, John D. Graham, Nathan H. Hurt, A. Alan Moghissi, Francesco Pompei, James R. Wallace and Richard Wilson at 11, 13.

of the expert's methodology, is of dubious value in determining reliability absent evidence that such information is available to other tire failure analysts. JA 39-40. The district court was apparently unaware of the substantial authority recognizing that error rates cannot be readily assessed in a wide range of disciplines.[30] Even a simple comparison between the experience-based methodology of tire failure analysis and spectrographic analysis, which was the technique mentioned in the authorities to which Daubert referred in order to illustrate the significance of the error rate factor, would have been helpful. *See Daubert*, 509 U.S. at 594. Absent an appreciation of whether error rates can be or have been ascertained from tire failure analyses, or even of the limits on the relevance of this factor to other disciplines, the district court's finding that Carlson failed to satisfy this "general observation" is of questionable value.

Finally, the district court applied the fourth "general observation" by inquiring whether Carlson's analysis and methodology were "generally accepted in the relevant scientific community." JA 40-41. Again, the court failed to appreciate that *Daubert* did not require satisfaction of this "general observation" to establish reliability. *Daubert*, 509 U.S. at 594. While this "general observation" may be relevant to determining reliability in mature disciplines where techniques and methods are widely known within the discipline, the Court made clear that it would not ordinarily be dispositive of the reliability inquiry. *Id.*

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30 *See, e.g., Compton*, 82 F.3d at 1516-19 (aerospace and mechanical engineer testifying about design defects and alternative designs not subject to *Daubert factors*). *See also* Edward J. Imwinkelreid, *The Next Step After Daubert*, 15 Cardozo L. Rev. at 2289 (citing Edward J. Imwinkelreid, *The 'Bases' of Expert Testimony: The Syllogistic Structure of Scientific Testimony*, 67 N.C. L. Rev. 1, 9 (1988) ("Would we require a modern accident reconstruction expert to replicate Newton's seventeenth century experiments to derive the laws of motion?")).

Yet, the district court approached this "general observation," as it did the other three, by viewing it as an iron clad requirement. Here again, the district court failed to follow the explicit guidance offered in *Daubert* that the reliability inquiry contemplated by Rule 702 be "a flexible one." *Id.* For example, Respondents provided evidence that the Defendants' own expert used a similar methodology for analyzing the failed tire in this case. JA 93. Rather than make allowance for this coincidence of approaches between the experts and consider whether agreement between experts on a key method might signify some measure of general acceptance, as a flexible approach would have warranted, the distict court dismissed it as insignificant since the experts differed on other matters.[31] JA 93-94.

The district court also failed to appreciate that the list of "general observations" was intended to be neither a "definitive checklist or test." *Daubert*, 509 U.S. at 593. Apart from a failure to look for indicia of reliability in the record that pertained to the discipline of tire failure analysis, the district court also resisted the Respondents' invitation to consider six additional factors set forth in one of the authorities cited with approval by *Daubert*. In reasoning that reveals the district court's resistance to diverge from the "general observations" under any circumstances, the court declined to consider these six additional factors, characterizing them as "of dubious merit," simply because the *Daubert* Court had declined to approve or disapprove of them. JA 90-91 n.1. The district court's talismanic invocation of *Daubert*'s "general observations" reflects an unwillingness to modify, vary or even add to these factors in assessing the reliability of Carlson's expert testimony. This is hardly the flexible approach to determining reliability that *Daubert* prescribed.

[31] There is even reason to question whether the experts differed over matters that were significant to the district court's reliability determination. In its opinion originally excluding Carlson's testimony, the district court characterized the methodology for which it wanted to see evidence of general acceptance as "a visual-inspection, process-of-elimination analysis of tire failure in the manner that it was performed by Carlson." JA 41. Since the district court elsewhere found no "inherent flaw in a process-of-elimination form of proof per se," JA 36 n.7, and acknowledged a shared use of visual inspection of the failed tire for telltale signs of abuse, it is hardly apparent what led the district court to remain convinced that Carlson's methodology enjoyed no general acceptance in the "relevant scientific community." JA 40.

2. *The Methods and Principles Associated With an Expert's Discipline, Not the Name or Category Assigned to the Discipline, Must Inform the Reliability Determination.*

The district court's decision to apply *Daubert*'s "general observations" in this case reveals in and of itself a misunderstanding about the initial question that should be asked by the courts in determining the reliability of an expert's opinion. The district court confused the principle in *Daubert* that expert testimony must be reliable with the application of that principle to scientific testimony, which gave rise to the "general observations" used in assessing the reliability of the scientific testimony then before the Court.[32] Given that error, it is not surprising that the district court operated on the mistaken belief that the *Daubert* "general observations" should apply routinely to all expert testimony that can be characterized, in any manner, as having a foundation in scientific knowledge. JA 36-37. As a result, the district court assumed that Carlson's opinions must rest on scientific knowledge and automatically applied the "general observations" to assess the reliability of his proffered opinions. *Id.*

Digging below the district court's initial assumption that Carlson's testimony was scientific in nature, the Respond-

[32] As we have already demonstrated, *Daubert* intended the general benchmark of reliability to have universal application while the "general observations" inevitably must have a more limited reach. *See supra* at 17-18.

ents urged that the testimony be characterized differently and, therefore, that different factors should govern the determination of its reliability. JA 41. Rather than using that occasion to review the record for indicia of reliability, the district court engaged in a superficial examination of the knowledge on which Carlson relied. JA 37-38. While conceding that Carlson's testimony "does not concern a scientific concept per se," the court nonetheless stood by its original characterization after presuming, without analysis or empirical evidence, that "Carlson's method is necessarily grounded in some scientific foundation." JA 42-43. Since the expert's testimony rested on scientific knowledge, rather than on some other category of knowledge, the district court reasoned that the "general observations" must be applied to assess the expert's reliability. JA 42-43.

Rather than identify reliabilty factors in the record that are appropriate to the discipline of tire failure analysis, as *Daubert* directed, the district court engaged in an unpersuasive exercise in line drawing in an unfruitful effort to distinguish between scientific and technical knowledge and between an expert's methodology and principles that constitute its foundation. Instead of engaging in an empirical examination of the record, the district court applied normative assumptions about science and knowledge that were plainly outside its domain. *Daubert*, 509 U.S. at 600-01 (Rehnquist, J., concurring in part and dissenting in part) ("I do not doubt that Rule 702 confides to the judge some gatekeeping responsibility in deciding questions of the admissibility of proffered expert testimony. But I do not think it imposes on them either the obligation or the authority to become amateur scientists in order to perform that role."). As Judge Easterbrook has emphatically warned, reliability of expert testimony must be assessed by record evidence:

> GM's lawyers lampoon the methods Syson [safety engineer] used to test the sun visor and to reach conclusions about the engineering compromises that would optimize a sun visor's performance in light of the risks involved. But their *cri de coeur* is not backed up by references to any body of scientific knowledge. What tests do engineers use to resolve questions of the kind Syson addressed? What tests should he have performed? What data did he overlook? Counsel apparently want appellate judges to make *a priori* judgments about how scientific inquiry should be conducted. That was quackery lies. . . . For all this record reveals, Syson performed the tests that GM's staff engineers or the faculty of MIT use to reach conclusions. . . . A litigant . . . has to do more than appeal to a lawyer's sense of how science should be done.

DePaepe v. General Motors Corp., 141 F.3d 715, 719-20 (7th Cir. 1998).

The Eleventh Circuit properly rejected the automatic application of the "general observations" and returned the case for an identification of reliability factors drawn from the record. JA 103. While the Eleventh Circuit reached a result that effectuates *Daubert* by rejecting the presumptive application of the "general observations" and directing that reliability be based on the record, it too engaged in unproductive line drawing over the bases for the expert testimony.[33] JA 100-02. Having reached

[33] Although the difference between how the district court and the court of appeals characterized the foundation of Carlson's testimony should not be dispositive here, since such line drawing is ultimately unproductive, the Eleventh Circuit's view that Carlson's opinions are grounded in experience, not scientific principle, is more persuasive than the peremptory characterization of his opinions as scientific in nature. The analogy that the court of appeals drew between Carlson and an auto mechanic who assessed the cause of a spark plug burn is compelling. JA 101 n.6. Both experts, Carlson and the hypothetical auto mechanic, rely heavily upon knowledge drawn from lengthy experience with the item at issue; neither expert draws directly upon physics or chemistry to form the opinions at issue. JA 101-02. The district court, in contrast, characterized

the result that is faithful to Rule 702 and *Daubert*, the Eleventh Circuit's reversal and remand should be affirmed.

D. The Universal Application of *Daubert's* "General Observations" Could Lead to Widespread Exclusion of Experts Whose Opinions Are Otherwise Well-Recognized.

The universal application of *Daubert*'s "general observations," as the district court practiced and the petitioners here advocate, could profoundly disrupt, and even obliterate, entire fields of expertise by jeopardizing the admissibility of opinions whose reliability is otherwise well-recognized. Some foot soldiers in the war on crime, for example, have for years relied on their experience and a consistent methodology to identify the *modus operandi* of people engaged in criminal enterprise and to rely upon their expertise in the ensuing prosecutions. Their law enforcement methods and strategies may be endangered by the routine application of reliability standards that depend on factors, such as susceptibility to error rate assessments, testing and even publication and peer review, which many will never be able to satisfy. *See, e.g., United States v. Ochoa*, No. 96-50007, 1997 U.S. App. LEXIS 13878, at *3-4 (9th Cir. June 9, 1997) (*Daubert*'s "general observations" do not apply to testimony of narcotics officers regarding *modus operandi* of drug dealers); *United States v. Hale*, No. 96-10358, 1997 U.S. App. LEXIS 26524,

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Carlson's testimony as science simply because it involved "an application of scientific concepts involved in physics, chemistry, and mechanical engineering." JA 42-43. The line that the district court drew would sweep nearly every field within the science category because virtually all forms of professional inquiry involve some application of scientific principles. Narcotics officers, for example, who testify about the *modus operandi* of drug dealers rely upon years of experience for their opinions but the behavior of drug dealers that they are characterizing might involve applications of chemistry. Yet, courts have declined to apply the "general observations" to narcotics officers. *See* text *infra* at 36-37.

at *5 (9th Cir. Sept. 1997) (same); *United States v. Cordoba*, 104 F.3d 225, 230 (9th Cir. 1997) (same); *United States v. Webb*, 115 F.3d 711, 716 (9th Cir.), *cert. denied*, 118 S. Ct. 429 (1997) (*Daubert's* standards for admission do not apply to officers' testimony regarding concealment of weapons); *United States v. Ly*, Nos. 97-10130, 97-10131, 97-10148, 97-10162, 97-10166, 1988 U.S. App. LEXIS 6060 (9th Cir. Mar. 25, 1998) (*Daubert* factors should only be applied to "scientific" experts and not to expert on gambling activities in casinos); *United States v. Bighead*, 128 F.3d 1329, 1330 (9th Cir. 1997) (expert testimony on typical characteristics of child sex abuse victims not subjected to *Daubert* factors for admissibility); *Lawson v. Trowbridge*, 153 F.3d 368, 375-76 (7th Cir. 1998) (noting that *Daubert* factors were not helpful when assessing reliability of expert on police training in § 1983 cases). As one commentator cautioned, the routine application of the *Daubert* "general observations" could undermine the expertise of certified public accountants because their theories could not be tested or police officers because they fail to subject their methods of identifying gang member identification to publication. Lisa Agrimonti, *The Limitations of Daubert and its Misapplication to Quasi-Scientific Experts, A Two-Year Case Review of Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 35 Washburn L.J. 134, 148 n.71 (Fall 1995). The wooden application of these "general observations" could wreak havoc in almost all fields of human endeavor that are involved in litigation.

While the simplicity of employing the "general observations" to assess all expert reliability may have some superficial appeal, this strategy for managing the considerable presence of experts in federal courtrooms will inevitably fail because the fields of expertise to which they will apply are too diverse to permit their success. The day has passed when a "one size fits all" approach to assessing expert reliability can be reconciled with the dynamic na-

ture of the Federal Rules of Evidence. The imposition of a single set of detailed reliability criteria on diverse fields of expertise will inevitably set standards that cannot be met. The widespread exclusion of long-standing experts could very well be the legacy of the approach advanced by the petitioners here.

II. HAD THE DISTRICT COURT CONSIDERED THE FIELD OF TIRE FAILURE ANALYSIS IN DETERMINING THE ADMISSIBILITY OF CARLSON'S TESTIMONY, IT WOULD HAVE FOUND SIGNIFICANT INDICIA OF RELIABILITY PRESENT IN THE RECORD.

The appropriate approach for the district court to obtain the necessary information to review the reliability of an expert opinion is to perform a discipline-specific record review for indicia of reliability.[34] It is true that the proponent of the expert testimony must put forth a *prima facie*[35] case of reliability to allow the preliminary assessment of the expert's reasoning and methodology as required by *Daubert*. *Daubert*, 509 U.S. at 592-93. But, the opponent of the testimony must then supply record evidence, not merely lawyers' arguments,[36] that establish the expert failed to apply a reliable methodology or analysis. The resolution of this preliminary assessment must be determined on the basis of record evidence that informs the court about the discipline at issue. In an opinion that is so compelling that it bears repeating, Judge

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[34] *See* Margaret A. Berger, *Procedural Paradigms for Applying the Daubert Test*, 78 Minn. L. Rev. 1345, 1366 (1994) (noting that the court needs information on the expertise at issue to perform its preliminary evaluation of reliability).

[35] *See Bourjaily v. United States*, 483 U.S. 171, 175 (1987) (rejecting the argument that a standard higher than "more likely than not" is required for admissibility rulings).

[36] *See DePaepe v. GMC*, 141 F.3d at 720 (rejecting lawyers' attack on expert because it was not "backed up by references to any body of scientific knowledge").

Easterbrook described the burden placed on the opponent of expert evidence:

> What tests do engineers use to resolve questions of the kind Syson [the safety engineer] addressed? What tests should he have performed? What data did he overlook? Counsel apparently want appellate judges to make *a priori* judgments about how scientific inquiry should be conducted. That way quackery lies. . . . For all this record reveals, Syson performed the tests that GM's staff engineers or the faculty of MIT use to reach conclusions. (Syson was a design engineer at GM earlier in his career.) A litigant that wants . . . [to exclude] expert testimony has to do more than appeal to a lawyer's sense of how science should be done.

DePaepe v. GMC, 141 F.3d at 720 (citations omitted); *see also Kannankeril*, 128 F.3d at 808 (rejecting attack on expert because movant did not show that testing was necessary); *see also Ambrosini*, 101 F.3d at 136 (court looked to record to determine the methodologies and prnciples applied by the challenged epidemiologist).

All the evidence in the record before the trial court that provided the necessary information on the methodology and principles of tire failure analysis came from the three tire failure analysis experts, who expressed their opinions in affidavits, reports, and deposition testimony. While the agreement of opposing experts on the proper methodology and application of that methodology is not necessarily dispositive of reliability, it can be a strong indicum of reliability where no other record evidence contradicts it. *See, e.g., Garcia*, 996 F. Supp. at 622-23 (court identified methodology used by both parties' experts as indicunn of reliability of challenged expert's method and opinion); *cf. Benedi v. McNeil-P.P.C., Inc.*, 66 F.3d 1378, 1384 (4th Cir. 1995) ("We will not declare such methodologies invalid and unreliable in light of the medical community's daily use of the same methodologies in diagnosing patients.").

On this record, all three tire failure analysis experts, including two experts for the plaintiff and one for the defendant, used the same methodology to determine if the tire failure in question was caused by abuse or defect. Each expert determined that visual observation of the accident tire for specific telltale signs of abuse was the appropriate method to determine the cause of the tire separation failure. JA 209-10, 267-68, 412-18, 419-21, 430-35. Dodson, defendants' tire expert, who had considerable experience in the discipline, testified as follows:

> Q: When you had the tires to examine them, what did you do?
>
> A: Conducted a visual non-destructive examination.
>
> * * * *
>
> Q: You visually inspected the tires. You made these pictures. What else?
>
> A: As it relates to these tires, that's it.

JA 425-26.

Dodson's visual examination focused on the telltale signs of abuse: treadwear pattern, bead groove/rim flange impressions, and sidewall deterioration. JA 430-35. Dodson also examined the accident tire for puncture holes. *Id.* In addition to this visual examination, Dodson reviewed the maintenance records and statements of witnesses to the accident, as part of his analysis. *Id.*

Plaintiffs' expert, Carlson, employed the same methodology of visual observation focusing on the telltale signs of abuse in order to make the ultimate determination of whether the separation failure was caused by abuse or defect. JA 199-200, 209-11, 279-80, 412-18. Petitioners inaccurately state that Carlson "looked only at various photographs of the tire" and based his opinion "totally on the photographs" and nothing else. Petitioners' Brief at 6. The record shows that in addition to his initial examination of the photographs of the accident tire, Carlson confirmed the accuracy of the photographs by looking at the accident tire and the three remaining tires for one hour before his first deposition and three hours before his second deposition, and also reviewed witness statements, the maintenance records for the vehicle, and photographs of the van and the accident scene. JA 180-83, 243-44, 247-48, 251-52, 311-12. Carlson also had conferred with his colleague, Edwards, who had previously inspected the accident tire and reviewed the pertinent documents, before becoming too ill to continue on the case. JA 419-22. On this record there is no evidence that it is unsound to rely on photographic evidence in combination with other documentary evidence, reliance on a professional colleague's report based on inspection of the accident tire, and verification of the accuracy of the photographs.

This record reflects a consensus among all three experienced experts [37] that the methodology of tire failure analysis [38] consists primarily of visual observation of the

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[37] Contrary to Petitioners' contentions, Petitioner's Brief, at 5 n.2, Carlson explicitly testified that he performed "thousands" of control failure simulation tests on Michelin and competitor tires, some of which were designed to isolate causes for separation, and others in which he abused the tire and tested it to determine separation resistance and effects of abuse. JA 108-09, 110-11, 113, 120-21, 125, 131. He also inspected and tested tires that failed in the field, that were the subject of customer complaints, and that were subjected to experiments to assist improved design. JA 141, 390-91. While Carlson tested truck and light truck tires, he also participated in the testing of numerous passenger tires. JA 127. Although Petitioners attempt to argue otherwise, Petitioners' Brief at 5 n.2, Carlson testified and explained that for purposes of determining the cause of a tire failure, the knowledge and principles applied to light truck tires are highly similar to those applied to passenger vehicle tires. JA 138.

[38] Petitioners' amici attempt to argue that testing is often an integral part of the *design* engineering process. Brief of Steven N. Bobo, Donald G. Carter, William J. Coad, Ernest L. Daman, John D. Graham, Nathan H. Hurt, A. Alan Moghissi, Francesco Pompei, James R. Wallace and Richard Wilson at 13, 19. However,

failed tire for telltale signs of abuse.[39] This record contains no information identifying a different methodology for tire failure analysis other than the methodology employed by all three experts, nor does it contain criticism by any of these experienced experts of the suitability of that methodology.[40] None of the experts invoked scien-

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no mention is made of the necessity for testing in tire failure analysis *after* the tire has been used by the consumer and has failed. Similarly, other of Petitioners' amici argue that *Daubert's* "general observations" are appropriate to engineers performing accident reconstruction or asserting alternative design theories, but they do not discuss the relevance of these "general observations" to the expertise at issue here—tire failure analysis. Brief for John Allen, Gregory Baecher, Edward Bouwer, Everett Carter, Stephen Director, Richard Meehan, Gene Parkin, Bruce Rittman, Yaron Sternberg, Donald Vannoy, David Wagger, Christopher Wilt, and Gordon Wolman at 23-29.

[39] Likewise, Petitioners attempt to argue that a reliable methodology for tire failure analysis requires testing of the tire, Petitioners' Brief at 41, but that is incorrect as demonstrated by the record below. Like defendant's expert Dodson, Carlson chose not to perform any testing in this case. JA 234-36, 425-26. Furthermore Carlson explained where testing is informative and why it would be of limited or no value here. JA 233-35, 268-69, 272-73, 354-58, 372. Thus, the absence of testing in the record here does not offer any insight into the reliability of the proper methodology or application of it. *See Voorhies-Larson v. Cessna Aircraft Co.*, 177 F.R.D. 462, 468-69 (D. Ariz. 1998) (engineer who examined aircraft wreckage accident reports, and the fuel system design provided reliable opinion that defect was cause of accident, despite fact that he performed no independent tests); *Stecyk v. Bell Helicopter Textron, Inc.*, 1998 U.S. Dist. LEXIS 14081, at *8-10 (E.D. Pa. Sept. 8, 1998) ("[w]here other reliable evidence supports an expert's opinion, testing is not a prerequisite for reliability.")

[40] Petitioner's characterization of Carlson's "three step methodology" and their argument that he did not follow his methodology, Petitioner's Brief at 7-11, 33-34, are simply wrong. As to what they call the "first step," visual and tactile examination and testing, Carlson never said a tactile examination was generally required, although he noted it could be used to assist in determining if a puncture hole patch was adequate. App. B 5a-6a. However, in this case, Carlson determined that the patched puncture hole played no role in the failure separation, because there was no physical

tific principles or theories to explain the key role of visual observation for the telltale signs of abuse; rather all applied the same methodology based on their experience in observing failed tires, whether that experience was gained in the context of responding to warranty claims while employed in the tire manufacturing industry, industry tire design, testing or development, or consulting for industry.[41] JA 130-31, 338, 390-91, 416-17, 430-35.

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evidence of "polishing" around the hole that would indicate it caused the separation. JA 258-61, 463-64. Furthermore, Carlson explained at length why testing of the tire after the blow-out would not give meaningful information to answer the question whether the failure was caused by abuse or defect. JA 222, 234-36. As to what petitioners call the "second step," process of elimination, Carlson explained why, based on the evidence visible from the tire, he concluded that if there was no evidence of abuse then the failure had to be caused by a defect. JA 223-24, 284-86, 383-85, 387. He noted other potential causes of failure that were not relevant to this case, JA 115-16, 183-84, 190-91, and he noted that a separation type failure should never occur in the first treadlife of a tire, absent evidence of abuse, unless a defect did exist. JA 185-86, 209. As to what petitioners call the "third step," analysis of affirmative evidence of defect, including records pertaining to design, manufacture, and testing, Carlson did not testify that such analysis would assist the causation-determinative step of visual examination of the tire for signs of abuse. Defendants' expert, Dodson, also did not attempt to review these kind of records. JA 430-35. Carlson testified that such records may provide information to distinguish between a design and manufacturing defect. JA 319-20, 347-48. This record shows that the methodology in a separation failure case is to observe the tire for all possible signs of abuse and, if no sign of abuse is present, to attribute the separation to the only other known cause—defect, JA 210, 223-24, 276-77, 284-86, 383-85, 387, and that such methodology was applied by others in the discipline. JA 419-22, 430-35.

[41] The decades of professional experience of these experts in the industry itself and in litigation demonstrates that the discipline of tire failure analysis is not a new discipline. It has been recognized by the courts as providing relevant expert opinion to these types of cases for decades. *See, e.g., Torres v. Goodyear Tire & Rubber Co., Inc.*, No. 94-15092, 1995 U.S. App. LEXIS 20375, at *2 (9th Cir. July 13, 1995) (court upheld admissibility of tire failure expert

None of the experts authored or relied on peer reviewed publications to guide their work here,[42] nor did any of the experts rely on evidence of testability or error rate to support their opinions.

Furthermore, Carlson identified and explained the range of abuse factors that could cause a failure and specifically outlined the key signs of abuse pertinent to a separation case such as this: abnormal treadwear, bead

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opinion where expert had significant industry experience with tire failure analysis and where he examined the tire at issue); *see Smith v. Uniroyal Inc.*, 420 F.2d 438 (7th Cir. 1970) (visual inspection of tire by auto mechanic held sufficient to support jury verdict of manufacturing defect); *Glanzman v. Uniroyal, Inc.*, 892 F.2d 58, 60 (9th Cir. 1989) (tire failuure expert examined failed tire and other three tires and concluded that defect caused failure); *Hawthorne v. Michelin Tire Corp.*, Nos. 95-15742, 95-15743, 1996 U.S. App. LEXIS 29105 (9th Cir. Nov. 5, 1996) (tire failure experts offered conflicting opinions regardng cause of tire failure); *Marshall v. Arzuaga*, 828 F.2d 845, 851-52 (1st Cir. 1987) (permitting expert testimony based on photographic examination of failed tire); *Johnson v. Michelin Tire Corp.*, 812 F.2d 200, 204-05 (5th Cir. 1987) (both parties' experts offered conflicting opinions as to cause of tire failure); *Baker v. Firestone Tire & Rubber Co.*, 793 F.2d 1196, 1197 (11th Cir. 1986) (both parties' experts disagreed as to cause of tire failure); *Edwards v. Sears Roebuck & Co.*, 512 F.2d 276, 279-80 (5th Cir. 1975) (both parties presented expert testimony that conflicted regarding cause of tire failure); *see also Gatlin v. Cooper Tire & Rubber Co.*, 481 S.W.2d 338 (Ark. 1972) (tire failure experts employed on both sides examined tire and offered opinions regarding cause of tire failure); *Barth v. B.F. Goodrich Tire Co.*, 265 Cal. App. 2d 228, 71 Cal. Rptr. 306 (1968) (both sides' tire failure experts looked for signs of abuse on tire, for example, abnormal tread wear, and, when none were visible, plaintiff asserted that defect existed); *Firestone Tire and Rubber Co. v. Adams*, 541 A.2d 567 (Del. 1988) (conflicting tire failure experts permitted to testify regarding cause of tire failure); *Firestone Tire & Rubber Co. v. Jackson Transp. Co.*, 191 S.E.2d 110 (Ga. App. 1972) (both sides' experts permitted to testify about conflict ing opinions as to cause of tire separation).

[42] Carlson testified that when he worked for Michelin, the industry treated testing, design and failure data as proprietary, thus it could not be published. JA 111-13, 118-19.

grooves, marks on the rim flange, sidewall deterioration and punctures. JA 210-11, 276-77 and notes 7-11 *supra*. He explained how one observes the nature and degree of these telltale signs on the accident tire to determine if they demonstrate abuse or lack of abuse, JA 210-11, 276-77, and how by process of elimination one determines whether the separation failure in this case was caused by a defect or abuse. JA 223-24, 284-86, 383-85, 387. Carlson testified that none of the signs of abuse were significant on the failed tire. The tread wear pattern on the failed tire did not show excessive wear on both shoulders of the accident tire, a pattern necessary to establish abuse, JA 286-87, App. B 6a-7a, App. A 1a-7a, and the tread wear pattern on the failed tire was different from each of the other three tires, JA 290, 296-97, App. B 7a-11a. Carlson identified some grooves in the bead of the failed tire, but observed that the blackwall side of the accident tire did not show significant grooves. JA 256-57. Carlson explained that both the blackwall and whitewall sides of the tire would show significant bead grooves in abuse scenarios. JA 256-58. Carlson further testified that although the whitewall side of the tire did show some bead grooves, it was caused by the accident itself. JA 256-57. Carlson also observed that the sidewalls of the failed tire did not show significant deterioration and that the inner liner, an indicator of sidewall deterioration in an abuse scenario, was in "very good shape." JA 305-06.

Carlson additionally evaluated the patched puncture hole to determine if improper repair led to the tire failure separation. Carlson noted that: (1) improperly repaired punctures could lead to failure. JA 258-59; and (2) that in such a case, "polishing" would be evident around the puncture hole, JA 258-59, App. B 13a; and (3) that he had recently observed such "polishing" around a puncture hole in another case and determined that the puncture caused the failure. App. B. 13a. In this case, Carlson observed that: (4) although all the fill material was no

longer in the hole, the patch of the hole was adequate, JA 258-61, 353, 358; and (5) there was no polishing around the puncture, JA 258-61, App. B 13a. Therefore, he concluded that the repair of the puncture hole had not contributed to the failure. JA 258-61. Although Carlson typically would require two signs of significant abuse on visual observation of the accident tire to establish abuse as the cause of failure, here he was unable to find that any of the above signs indicated abuse. In conjunction with these observations, and his review of the tread depth measurements and the documentary information on the accident, he eliminated the potential abuse factors that could cause separation failure[43] and con-

[43] Other courts have evaluated the reliability of this type of process of elimination analysis as applied by safety experts and have concluded that it can be reliable, as demonstrated by the Seventh Circuit:

> Engineers trying to understand a disaster often follow causal chains ("failure trees") until they find one that can account for the calamity. Sherlock Holmes observed that "when you have eliminated the impossible, whatever remains, however improbable, must be the truth." [citation omitted] Courts need not disdain a method that both engineers and detectives find useful.

Bammerlin v. Navistar Int'l. Transp. Corp., 30 F.3d 898, 902 (7th Cir. 1994); *see Talkington v. Atria Reclamelucifers Fabrieken BV*, 152 F.3d 254, 264-65 (4th Cir. 1998) (electrical engineers examined all available evidence and, after ruling out other causes, concluded that fire was caused by lighter which failed to have warning labels); *Binakonsky v. Ford Motor Co.*, 133 F.3d 281, 290 (4th Cir. 1998) (medical examiner performed autopsy and determined cause of death by ruling out other causes based on lack of evidence); *see also Barth v. B.F. Goodrich Tire Co.*, 265 Cal. App. 2d 228, 71 Cal. Rptr. 306 (1968) (expert looked for signs of overdeflection or other abuse and, finding none, concluded that tire failed due to defect); *Uniroyal Goodrich Tire Co. v. Ford*, 461 S.E.2d 877, 895 (Ga. App. 1995) (Ruffin, J., dissenting) (noting that plaintiffs' tire expert, who had worked in Failed Tire Analysis at Uniroyal, looked for abrasion in shoulder of tire and, finding none, concluded that tire failed due to defect).

cluded the separation was caused by a defect.[44] JA 244-45, 256-59, 286-87, 302-06, App. B 7a-10a, 12a.

In *General Electric Co. v. Joiner*, the Court did not specifically rely on the "general observations" offered in its earlier decision in *Daubert*, but instead underscored the necessity that an expert explain how and why he or she applied their methodology to reach their opinion. *Joiner*, 118 S.Ct. 512, 518 (1997). Thus, an important element of the reliability assessment is whether the expert applies an accepted methodology and reasoned analysis and explains that application by reference to the principles of his or her discipline. *See Jones*, 107 F.3d at 1160-61 (handwriting analyst's testimony was found reliable based on his extensive qualifications and experience, and because he outlined the procedure he used, and described with detail how he reached his conclusions); *see also* Edward J. Imwinkelreid, *The Next Step After Daubert*,

[44] Although defendants' expert Dodson employed the same methodology and also relied primarily on visual observation of the tire, not testing, he found that there was sufficient positive evidence of each of the abuse factors to conclude that the failure was caused by abuse, not defect. JA at 430-35. The differences between the judgments and conclusions of these two experts are disputes resolved by credibility and weight determinations, properly made by the jury, not disputes as to appropriate methodologies and principles relied on within the discipline at issue, which are resolved by the district court. *Daubert* and the lower courts have recognized that the gatekeeper function is not to choose among disagreeing experts, to assess credibility, or to disqualify experts because their opinions are not free from vulnerabilities or weaknesses. These judgments are conventionally reserved for the jury with the benefit of cross-examination. *See Daubert*, 509 U.S. at 596; ("Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.") (citation omitted); *see also Kannankeril*, 178 F.3d at 806 ("Moreover *Daubert* does not set up a test of which opinion has the best foundation, but rather whether any particular opinion is based on valid reasoning and reliable methodology . . . credibility decisions arise after admissibility has been determined."); *McCullock v. H.B. Fuller Co.*, 61 F.3d 1038, 1045 (2d Cir. 1995) (same).

15 Cardozo L. Rev. at 2289 ("Experience is to non-scientific experts as experimentation is to scientists.").

The district court failed to analyze whether Carlson applied an accepted and reasoned analysis within the discipline of tire failure analysis. For example, the district court did not evaluate Carlson's methodology based on the record evidence demonstrating the methodology actually employed by all three experienced tire failure analysis experts in this case, JA 412-19, 419-22, 430-35, but rather evaluated the record for evidence of "rigorous scientific peer review procedures" to test the methodology. JA 93. After finding none, because none of these experts utilized such procedures or recognized their applicability, JA 412-19, 419-22, 430-35, the district court concluded Carlson's methodology lacked a "scientific basis" and therefore was unreliable. JA 93. This is neither the flexible nor the discipline-specific review required by *Daubert* or Rule 702.

CONCLUSION

In conclusion, the judgment of the Eleventh Circuit should be affirmed and this case should be returned to the district court to determine the admissibility of Mr. Carlson's opinion in accordance with indicia of reliability in the field of tire failure analysis.

Respectfully submitted,

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October 1998

APPENDICES

APPENDIX A

[1]

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF ALABAMA
NORTHERN DIVISION

Civil Action Number 94-T-997-N

PHYLLIS A. TILLERY,
Plaintiff,

vs.

BRIDGESTONE/FIRESTONE, INC., *et al.*,
Defendants.

DEPOSITION TESTIMONY OF:
DENNIS P. CARLSON

March 23, 1995

* * * *

[81] *Q. Generally, where you have overloading at a normal operating pressure, as you have defined it, and you have overdeflection caused by that overloading, you see cracks in the bead; is that correct?*

A. Yes. That is a situation where if it lasts for a long time, you can pick it out. Generally, [82] underinflation and overloading are two ends of the same horse, you might say. It is very hard to pick out.

Q. Okay.

A. We group them under the general category of overdeflection.

Q. Is there any tell-tale sign that would allow you to point to underinflation as opposed to overloading being the cause of the overdeflection?

A. Generally, you will see sidewall deterioration. And this can be on the inside or the outside of the sidewall, but it is much higher than in the bead sidewall.

Q. And that would be different from the uninflated tire, because there the sidewall is severely abraded and destroyed; is that right?

A. Yes.

Q. Okay.

A. The other things you can see with overdeflection, you can see wear [83] abnormalities, and you can see rim flange impressions.

Q. Where would the wear abnormalities show up?

A. Generally, you would have more wear on both shoulders.

Q. That would be on the tread of the tire?

A. On the tread of the tire, yes.

Q. What else?

A. The rim flange inflections.

Q. What else?

A. I think that's it. I think we may have touched upon this earlier. But in overdeflection, in the initial stages you can sometimes see deterioration in the cord of the sidewall that usually is more toward the uninflated type aspect or the very, very low inflation type running. But if you x-rayed the cord of the sidewall or cut it to see it, you can see deterioration [84] in there.

* * * *

[362]

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF ALABAMA
NORTHERN DIVISION

Civil Action Number CV-94-T-997-N

PHYLLIS A. TILLERY,
Plaintiff,

vs.

BRIDGESTONE/FIRESTONE, INC., *et al.*,
Defendants.

VOLUME II
DEPOSITION TESTIMONY OF:
DENNIS P. CARLSON

June 7, 1995

* * * *

[670] *Q. Can you quantify the percentage for me, approximately?*

A. No.

Q. Small percentage means to me something like ten, fifteen percent; is that what you are talking about?

A. That is a good guess, yes.

Q. Is that a good estimate of what you mean by small? I mean, it is your words. I don't want to put words in your mouth.

A. Ten percent.

Q. Ten percent?

A. Yeah. Something like that. I don't keep statistics.

Q. So ten percent of all of the tires that you have been asked to look at have had what you thought was a defect in either design or manufacture?

A. Yes.

Q. But fifty percent of all tires that you have been asked to look at where you found a separation, you [671] *concluded that there was a design or manufacturing defect?*

A. That's correct.

Q. Is that right? You don't know whether your experience is the same as the industry at large?

A. No, I don't.

Q. Do you know of any industry standards or information or literature, any type of information that is out there in the industry, as to what the percentages are, where you have a separation, as to what percentage of those separations are caused by abuse or rather by some type of manufacturing or design problem?

A. No, I don't think I do. Like I say, I have got some data that I will have to go through to see if I can find that type of ratio.

Q. What data is that that you are referring to?

A. I have some adjustment data [672] and similar experience, some testimony from other tire companies.

* * * *

APPENDIX B

[1]

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF ALABAMA
SOUTHERN DIVISION

CV-93-0860-CB-S

PATRICK CARMICHAEL, ETC., *et al.*,
Plaintiffs,

vs.

SAMYANG TIRES, INC., *et al.*,
Defendants.

TESTIMONY OF DENNIS P. CARLSON, JR.

March 7, 1995

* * * *

[113] Q Let me ask you this, do you agree that even a nail hole that appears to be patched correctly can still leak? I mean visually you can't always determine if a patch leaks or not.

A I think you can.

Q Just by looking at the patch?

A Just by testing the patch. Looking at the patch and determining whether it's still stuck around the edges.

Q And that visual test of just looking at the patch is a hundred percent reliable in your opinion?

A Well, that and other indications.

Q What are the other indications?

A Well, if you're trying to blame the nail hole on a separation there would be polishing around the nail hole to show that the leakage did cause the separation.

Q Well, I'm talking about whether you can just—I'm not talking about any separation, I'm [114] talking about just looking at a nail hole patch.

A Uh-huh.

Q Can you tell just by a visual inspection whether or not that patch is leaking?

A I think—

Q Or rather do you have to do one of these nail hole leakage tests that you described to us?

A I think that you can with a chemical patch. I don't think you can with a plug patch.

Q Would you agree that the best way to determine whether a patch is leaking or not is to do the type of test that you're talking about?

A Yes.

Q And that's the most reliable method?

A It's the most reliable but I think the other method is sufficiently reliable.

Q But not as reliable as the nail hole test that you described earlier?

A I think with a chemical patch you can approach the same reliability.

* * * *

[373]

DEPOSITION OF DENNIS P. CARLSON, JR.

May 15, 1995

* * * *

[405] Q Do you want to lift it up and slip that under there. Okay. Do we have the tread on the tire in the way it would have been before the accident?

A I believe so.

Q Now my question was: Do the shoulders of this tire have more wear than the center of the tread?

A Well, in some places they're pretty close to being the same. See, the characteristic you have here is that this is very uneven, which means it was caused by the

separation. See, here it is worn almost completely off, and yet in other places it's less worn. You also have the characteristic of a slight V shape in here.

Q And what you're talking about when you say where it is worn, you're talking about on the whitewall side of the tire or the side opposite?

A Yes.

Q All right. And you would agree that's on the shoulder area of the tire?

A Well, it's just in from the shoulder. The shoulder is basically a pretty good depth out here.

* * * *

[415] Q Did that skid occur during the accident?

A Probably. It could have been a previous skid where it locked up.

Q Did this tire deflate during the accident?

A Sure.

Q When you say this big hole in the Hercules tire, it's a Hercules belted radial DSR II, could have been caused by a skid and that that skid could have pre-existed; what are you talking about there?

A Well, a tire that has been flat spotted, say due to a brake, generally has a tendency to, when it is braked hard the next time, will stop in the same place.

In other words, I have failed tires like this and—with multiple skids where it would be locked up on some machines that I had at Michelin and there would be only two places in the whole tire that had flat spots. So you would skid it six or seven times, fail the tire like this, and there would only be traces of flat spots in two places. So as the tire was slowing down to the brake, it has a tendency to stop in that flat spot. So there may be a flat spot before.

Q You don't know where this tire was located on the van at the time of the accident?

[416] A The left rear.

Q Do you have an opinion as to what caused the hole in this tire?

A I haven't looked at it that much but it looks like a skidding flat spot. There may be a cut along this edge.

Q Is there any other explanation for the hole?

A I don't have one right now.

Q Do you think that hole was created by the van skidding at the time of the accident?

A Without doing an accident investigation, that's the best hypothesis. It may have been done by the wrecker; who knows?

Q Could be tow damage?

A Yeah.

Q Okay. The reason we got these tires out was to look at the tread wear. Do you see anything significant about the tread wear on this tire?

A Slightly worn more on the shoulder, and in the center it's very even and flat.

Q Do you have your measurement device with you? What do you call that thing?

A No. I don't know, tread depth.

[417] Q Tread depth indicator?

A Indicator.

Q You don't have that with you?

A No, I don't have.

Q You measured the tread depth on this tire?

A I did. I don't know what it was.

Q Did you take any notes of it?

A No, I didn't.

Q You didn't consider that significant?

A It's fairly even.

Q You don't believe there's more tread wear on the shoulder of this tire, particularly on the whitewall shoulder?

A There is some more, yes.

Q What does that tell you about the tread wear of the failed tire, the one we're talking about?

A Well, it's—I don't think it was put on the front axle, this particular tire, was put on the front axle very much. If it was, it was at the beginning and has been on the rear axle a long time.

Q Do you know what the tread depth on this tire is?

A Well, it's very close to 3/32.

[418] Q What about the shoulder?

A In the shoulder, it's—I need to look at the original tread depth—I mean the original tread design—to see. See—

Q Wait, I'm asking what the remaining tread depth at the shoulder is, not what the original—

A No, we need to see whether this was a continuous groove or whether this is part of the wear bars. See, there are wear bars in here that aren't reached yet. It's very close right here. So you would measure this groove, this groove, this groove, and this groove, and they're fairly close.

See, this is a wear bar and that indicates the tire is worn out when this forms a continuous line across there. It's very close right there.

Q It's very close to being worn out?

A It's very close here and here. It's a little closer in the shoulder.

Q So there is more wear on the whitewall shoulder of this tire; is that correct?

A Yes.

Q And by this tire we're talking about the Hercules DSR II which you say was manufactured by [419] Cooper?

A Yes, if I recall correctly, this is a Cooper tire.

Q And we're talking about the wear bar that comes down, if you were to extend it, right to the—between the B and E on "belted" on the whitewall side; is that correct?

A Yeah.

Q All right.

A Here's another one. You can see you have just a little bit left here, probably not even a 32nd in the center.

Q So it's less than 3/32 of an inch?

A Well, see when you start with eleven, you know at the edge you've probably worn ten and in the center you've probably worn nine. So that would be a 10 per-

cent difference from center to edge which is not very much.

Q Is that significant to you in your analysis?

A There could be so many different things that could cause that.

* * * *

[428] Q And less than 2/32 in some areas; is that right?

A Could be.

Q Did you measure it?

A I remember measuring but I don't remember writing them down.

Q Well, is the whitewall shoulder on this right front Sears Guardsman less than 2/32 of an inch remaining tread depth?

A In some places, yes.

Q What about the black-wall shoulder?

A I don't recall what the measurement was.

Q Do you have any opinion about what the measurement is of the remaining tread depth on the black-wall shoulder of this tire?

A No.

Q Now there appears to be a good bit of deterioration or—

A I think it hit the fender.

Q Would that have been during the accident?

A Probably.

* * * *

[431] Q Do you have any measurement as to what the difference is or any opinion about what the difference is?

A I don't recall what it is.

Q Well, it appears to be 2/32 of an inch or less on the whitewall shoulder. What is the tread depth in the center?

A Well, it's more than 2/32.

Q Do you have any opinion about what it is?

A I don't recall what I measured.

Q Do you have any notes on what you measured?

A No.

Q Is that significant to you that this tire has a tread dept in the center that's greater than the tread depth on the shoulder?

A Well, this is a different wear pattern than the accident tire. And being on the front axle, you can have that. Like I say, it looks like what you see on the front axle of Ford vehicles.

Q Does each vehicle have a certain wear pattern [432] it puts on a tire?

A Sometimes.

Q And you seem to be implying that Ford vehicles wear out tires more quickly on the shoulder of the tire.

A Generally, they do, on the front end. On Ford trucks.

Q Do you know whether the Hercules tires, either the DSR II or the Superior XII, were ever on the front of this vehicle?

A I don't know.

Q Do you have any opinion about that?

A It doesn't look like it. If they were it was in the beginning of their life and the rear axle wear has evened things out.

Q Let's talk about this last tire here before we get up. This is the Sears Guardsman or Sears Response XL.

A Okay.

Q Has number P-810-LF, which I take it means left front; is that correct?

A Yes.

Q Was that where this tire was located at the [433] time of the accident?

A As far as we know.

Q Do you see anything significant about the tread wear on this tire?

A Well, it again has a little bit more wear at the edge than the center. It looks like it's worn a little bit more evenly than the other Guardsman.

Q It's worn more in the whitewall side shoulder; is that correct?

A Yeah, the inside.

Q What is the remaining tread depth there?

A Well, in some places it"s worn a little more than others. In a few places it looks like it would be to the 2/32 mark.

Q Which would be below 2/32 remaining tread depth?

A Yes.

Q And again this tire has greater tread depth in the center than on the shoulder; is that correct?

A Yes.

Q Is there anything else significant you see about this tire?

A Just what I said.

* * * *

[435] Q And also, as well, about the rear tires; isn't that correct?

A Well, I don't think this is significant. The other has an explanation for it—on the one shoulder and it's a different character. The accident tire has sharp edges on the shoulder where this one is rounded off. So it's a different type of wear pattern.

Q Would the fact that the front tires, in your opinion, have greater wear on the shoulder than in the center have any significance to your analysis of the tire that failed?

A No.

Q None whatsoever?

A Well, it's something you have to look at.

Q Does that indicate to you that the vehicle operator, or whoever owned the vehicle before during it's life while these tires were on there, may not have paid particular attention to the inflation level of the tires?

A It does not indicate that.

* * * *

[463] Q And that was the one that we talked about last time where they had the chemical patch applied on the inner liner?

A Yes.

Q Do you know if there are any other punctures?

A I didn't notice any.

Q Assume for me that there's a puncture in the belt edge area that doesn't go all the way through the inner liner.

A Uh-huh.

Q What significance would that be to you?

A You could form a separation if you had corrosion in there.

Q That puncture that is in the belt edge but does not go all the way through the inner liner, that would allow the foreign material and the salt and the water that we talked about in your last deposition that could get in and create a separation; is that right?

A It could, yeah.

Q A separation caused by a puncture in the belt edge area that does not compromise the inner liner but [464] allows foreign material and dirt and air and water to get in there would be a separation that was a result of some abuse factor and not a separation that was the result of a design or manufacturing defect?

A That's correct. And in the last deposition I told you I had sent a tire back that had that particular condition. It's easy to spot.

Q How do you spot it?

A Well, you find a smoothing around the—a polishing around the area and corrosion.

MR. JACKSON: Off the record.

(OFF THE RECORD)

BY MR. BABINGTON:

Q In your earlier deposition you said you had reviewed some maintenance records on this tire. Do you recall which maintenance records you reviewed?

A I don't recall that.

* * * *

APPENDIX C

COMMITTEE ON RULES OF PRACTICE AND PROCEDURE OF THE JUDICIAL CONFERENCE OF THE UNITED STATES

Washington, D.C. 20544

TO: Honorable Alicemarie H. Stotler, Chair Standing Committee on Rules of Practice and Procedure

FROM: Honorable Fern M. Smith, Chair Advisory Committee on Evidence Rules

DATE: May 1, 1998

RE: Report of the Advisory Committee on Evidence Rules

I. Introduction

The Advisory Committee on Evidence Rules met on April 6th and 7th in New York City. At the meeting, the Committee approved three proposed amendments to the Evidence Rules, with the recommendation that the Standing Committee approve them for public comment.

* * * *

II. Action Items

A. Rule 702.

The proposed amendment to Evidence Rule 702 is in response to the Supreme Court's decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, and it attempts to address the conflict in the courts about the meaning of *Daubert*. The proposal is also a response to bills pending in Congress that purport to "codify" *Daubert*, but that, in the Committee's view, raise more problems than they solve. The proposed amendment specifically extends the trial court's *Daubert* gatekeeping function to all expert

testimony; requires a showing of reliable methodology and sufficient basis; and provides that the expert's methodology must be applied properly to the facts of the case. The Committee prepared an extensive Advisory Committee Note that will provide guidance for courts and litigants in determining whether expert testimony is sufficiently reliable to be admissible. Both the proposed amendment to Evidence Rule 702 and the Advisory Committee Note to the amendment are attached to this Report.

Recommendation: The Evidence Rules Committee recommends that the proposed amendment to Evidence Rule 702 be approved for public comment.

B. Rule 701

The proposal to amend Evidence Rule 701 seeks to prevent the practice of proffering an expert as a lay witness and thereby end-running both the reliability requirements of Rule 702 and the disclosure requirements pertaining to expert testimony. Under the amendment, testimony cannot be admitted under Rule 701 if it is based on scientific, technical or other specialized knowledge. The language of the amendment intentionally tracks the language defining expert testimony in Rule 702. Both the proposed amendment to Evidence Rule 701 and the Advisory Committee Note to the amendment are attached to this Report. The proposed amendment does not prohibit lay witness testimony on matters of common knowledge that have traditionally been the subject of lay opinions.

Recommendation: The Evidence Rules Committee recommends that the proposed amendment to Evidence Rule 701 be approved for public comment.

C. Rule 703.

The proposal to amend Evidence Rule 703 would limit the disclosure to the jury of inadmissible information that is used as the basis of an expert's opinion. Under current

law, litigants can too easily evade an exclusionary rule of evidence by having an expert rely on inadmissible evidence in forming an opinion. The inadmissible information is then disclosed to the jury in the guise of the expert's basis. The proposed amendment imposes no limit on an expert's opinion itself. The existing language of Evidence Rule 703, permitting an expert to rely on inadmissible information if it is of the type reasonably relied upon by experts in the field, is retained. Rather, the limitations imposed by the proposed amendment relate to the disclosure of this inadmissible information to the jury. Under the proposed amendment, the otherwise inadmissible information cannot be disclosed to the jury unless its probative value in assisting the jury to weigh the expert's opinion substantially outweighs the risk of prejudice resulting from the jury's possible misuse of the evidence. Both the proposed amendment to Evidence Rule 703 and the Advisory Committee Note to the amendment are attached to this Report.

Recommendation: The Evidence Rules Committee recommends that the proposed amendment to Evidence Rule 703 be approved for public comment.

* * * *

Rule 702. Testimony by Experts

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise—*provided that (1) the testimony is sufficiently based upon reliable facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.*

COMMITTEE NOTE

Rule 702 has been amended in response to *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and to the many cases applying *Daubert*. In *Daubert* the Court charged district judges with the responsibility of acting as gatekeepers to exclude unreliable expert testimony. The amendment affirms the trial court's role as gatekeeper and provides some general standards that the trial court must use to assess the reliability and helpfulness of proffered expert testimony. The Rule as amended provides that expert tesetimony of all types—not only the scientific testimony specifically addressed in *Daubert*—presents questions of admissibility for the trial court in deciding whether the evidence is reliable and helpful. Consequently, the admissibility of all expert testimony is governed by the principles of Rule 104(a). Under that Rule, the proponent has the burden of establishing that the pertinent admissibility requirements are met by a preponderance of the evidence. *See Bourjaily v. United States*, 483 U.S. 171 (1987).

Daubert set forth a non-exclusive checklist for trial courts to use in assessing the reliability of scientific expert testimony. The specific factors explicated by the *Daubert* Court are: (1) whether the expert's technique or theory can be or has been tested—that is, whether the expert's theory can be challenged in some objective sense, or whet' it is instead simply a subjective, conclusory approac that cannot reasonably be assessed for reliability; (2) whether the technique or theory has been subject to peer review and publication; (3) the known or potential rate of error of the technique or theory when applied; (4) the existence and maintenance of standards and controls; and (5) the degree to which the technique or theory has been generally accepted in the scientific community.

No attempt has been made to "codify" these specific factors set forth in *Daubert*. *Daubert* itself emphasized

that the factors were neither exclusive nor dispositive. Other courts have recognized that not all of the specific *Daubert* factors can apply to every type of expert testimony. *See Tyus v. Urban Search Management*, 102 F.3d 256 (7th Cir. 1996) (noting that the factors mentioned by the Court in *Daubert* do not neatly apply to expert testimony from a sociologist). *See also Kannankeril v. Terminix Int'l, Inc.*, 128 F.3d 802, 809 (3d Cir. 1997) (holding that lack of peer review or publication was not dispositive where the expert's opinion was supported by "widely accepted scientific knowledge"). The standards set forth in the amendment are broad enough to require consideration of any or all of the specific *Daubert* factors where appropriate.

Courts both before and after *Daubert* have found other factors relevant in determining whether expert testimony is sufficiently reliable to be considered by the trier of fact. These factors include:

(1) Whether experts are "proposing to testify about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying." *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1317 (9th Cir. 1995).

(2) Whether the expert has unjustifiably extrapolated from an accepted premise to an unfounded conclusion. *See General Elec. Co. v. Joiner*, 118 S.Ct. 512, 519 (1997) (noting that in some cases a trial court "may conclude that there is simply too great an analytical gap between the data and the opinion proffered").

(3) Whether the expert has adequately accounted for obvious alternative explanations. *See Claar v. Burlington N.R.R.*, 29 F.3d 499 (9th Cir. 1994) (testimony excluded where the expert failed to consider other obvious causes for the plaintiff's condition). *Compare Ambrosini v. Labarraque*, 101 F.3d

129 (D.C.Cir. 1996) (the possibility of some uneliminated causes presents a question of weight, so long as the most obvious causes have been considered and reasonably ruled out by the expert).

(4) Whether the expert "is being as careful as he would be in his regular professional work outside his paid litigation consulting." *Sheehan v. Daily Racing Form, Inc.*, 104 F.3d 940, 942 (7th Cir. 1997). *See also Braun v. Lorillard Inc.*, 84 F.3d 230, 234 (7th Cir. 1996) (*Daubert* requires the trial court to assure itself that the expert "adheres to the same standards of intellectual rigor that are demanded in his professional work.").

(5) Whether the field of expertise claimed by the expert is known to reach reliable results. *See Sterling v. Velsicol Chem. Corp.*, 855 F.2d 1188 (6th Cir. 1988) (rejecting testimony based on "clinical ecology" as unfounded and unreliable).

All of these factors remain relevant to the determination of the reliability of expert testimony under the Rule as amended.

The Court in *Daubert* declared that the "focus, of course, must be solely on principles and methodology, not on the conclusions they generate." 509 U.S. at 595. Yet as the Court later recognized, "conclusions and methodology are not entirely distinct from one another." *General Elec. Co. v. Joiner*, 118 S.Ct. at 519. Under the amendment, as under *Daubert*, when an expert purports to apply principles and methods consistent with professional standards, and yet reaches a conclusion that other experts in the field would not reach, the trial court may fairly suspect that the principles and methods have not been faithfully applied. *See Lust v. Merrell Dow Pharmaceuticals, Inc.*, 89 F.3d 594, 598 (9th Cir. 1996). The amendment specifically provides that the trial court must scrutinize not only the principles and methods used by the expert, but also whether these principles and methods

have been properly applied to the facts of the case. As the court noted in *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 745 (3d Cir. 1994): "*any* step that renders the analysis unreliable . . . *renders the expert's testimony inadmissible. This is true whether the step completely changes a reliable methodology or merely misapplies that methodology.*"

Daubert involved scientific experts, and the Court left open whether the *Daubert* standards apply to expert testimony that does not purport to be scientifically-based. The inadaptability of many of the specific *Daubert* factors outside the hard sciences (e.g., peer review and rate of error) has led some courts to find that *Daubert* is simply inapplicable to testimony by experts who do not purport to be scientists. *See Compton v. Subaru of Am., Inc.*, 82 F.3d 1513 (10th Cir. 1996) (*Daubert* inapplicable to expert testimony of automotive engineer); *Tamarin v. Adam Caterers, Inc.*, 13 F.3d 51 (2d Cir. 1993) (*Daubert* inapplicable to testimony based on a payroll review prepared by an accountant). Other courts have held that *Daubert* is applicable to all expert testimony, while noting that not all of the specific *Daubert* factors can be applied readily to the testimony of experts who are not scientists. *See Watkins v. Telsmith, Inc.*, 121 F.3d 984, 991 (5th Cir. 1997), where the court recognized that "[n]ot every guidepost outlined in *Daubert* will necessarily apply to expert testimony based on engineering principles and practical experience," but stressed that the trial court after *Daubert* is still obligated to determine whether expert testimony is reliable; therefore, "[w]hether the expert would opine on economic evaluation, advertising psychology, or engineering," the trial court must determine "whether the expert is a hired gun or a person whose opinion in the courtroom will withstand the same scrutiny that it would among his professional peers."

The amendment does not distinguish between scientific and other forms of expert testimony. The trial court's

gatekeeping function applies to testimony by any expert. While the relevant factors for determining reliability will vary from expertise to expertise, the amendment rejects the premise that an expert's testimony should be treated more permissively simply because it is outside the realm of science. An opinion from an expert who is not a scientist should receive the same degree of scrutiny for reliability as an opinion from an expert who purports to be a scientist. *See Watkins v. Telsmith, Inc.*, 121 F.3d 984, 991 (5th Cir. 1997) ("[I]t seems exactly backwards that experts who purport to rely on general engineering principles and practical experience might escape screening by the district court simply by stating that their conclusions were not reached by any particular method or technique."). Some types of expert testimony will be more objectively verifiable, and subject to the expectations of falsifiability, peer review, and publication, than others. Some types of expert testimony will not rely on anything like a scientific method, and so will have to be evaluated by reference to other standard principles attendant to the particular area of expertise. The trial judge in all cases of proffered expert testimony must find that it is properly grounded, well-reasoned, and not speculative before it can be admitted. If there is a well-accepted body of learning and experience in the expert's field, then the expert's testimony must be grounded in that learning and experience to be reliable, and the expert must explain how the conclusion is so grounded. *See, e.g.*, American College of Trial Lawyers, *Standards and Procedures for Determining the Admissibility of Expert Testimony after Daubert*, 157 F.R.D. 571, 579 (1994) ("[W]hether the testimony concerns economic principles, accounting standards, property valuation or other non-scientific subjects, it should be evaluated by reference to the 'knowledge and experience' of that particular field.").

The amendment requires that the testimony must be the product of reliable principles and methods that are reliably applied to the facts of the case. While the terms

"principles" and "methods" may convey one impression when applied to scientific knowledge, they remain relevant when applied to testimony based on technical or other specialized knowledge. For example, when a law enforcement agent testifies regarding the use of code words in a drug transaction, the principle used by the agent is that participants in such transactions regularly use code words to conceal the nature of their activities. The method used by the agent is the application of extensive experience to analyze the meaning of the conversations. So long as the principles and methods are sufficiently reliable, and so long as the proponent demonstrates that these principles and methods are applied reliably to the facts of the case, this type of testimony should be admitted.

If the witness is relying solely or primarily on experience, then the witness must explain how that experience leads to the conclusion reached. The trial court's gatekeping function requires more than simply "taking the expert's word for it." *See Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1319 (9th Cir. 1995) ("We've been presented with only the experts' qualifications, their conclusions and their assurances of reliability. Under *Daubert*, that's not enough."). The more subjective and controversial the expert's inquiry, the more likely the testimony should be excluded as unreliable. *See O'Conner v. Commonwealth Edison Co.*, 13 F.3d 1090 (7th Cir. 1994) (expert testimony based on a completely subjective methodology held properly excluded).

The amendment requires that expert testimony must be based upon reliable and sufficient underlying "facts or data." The term "data" is intended to encompass the reliable opinions of other experts. See the original Advisory Committee Note to Rule 703.

There has been some confusion over the relationship between Rules 702 and 703. The amendment makes clear that the adequacy of the basis of an expert's testimony is to be decided under Rule 702. Rule 702 sets

forth the overarching requirement of reliability, and an analysis of the expert's basis cannot be divorced from the ultimate reliability of the expert's opinion. In contrast, the "reasonable reliance" requirement of Rule 703 is a relatively narrow inquiry. By its terms, Rule 703 does not regulate the basis of the expert's opinion per se. Rather, it regulates whether the expert can rely on information that is otherwise inadmissible. If the expert purports to rely on inadmissible information, Rule 703 requires the trial court to determine whether that information is of a type reasonably relied upon by other experts in the field. If so, the expert can rely on the information in reaching an opinion. However, the question of whether the expert is relying on a *sufficient* and reliable basis of information—whether admissible information or not—is governed by the reliability requirements of Rule 702.

The amendment makes no attempt to set forth procedural requirements for exercising the trial court's gatekeeping function over expert testimony, such as are discussed in, e.g, Margaret Berger, *Procedural Paradigms for Applying the Daubert Tests*, 78 Minn. L. Rev. 1345 (1994). Courts have shown considerable ingenuity and flexibility in considering challenges to expert testimony under *Daubert*, and it is contemplated that this will continue under the amended Rule. *See, e.g., Cortes-Irizarry v. Corporacion Insular*, 111 F.3d 184 (1st Cir. 1997) (discussing the application of *Daubert* in ruling on a motion for summary judgment); *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 736, 739 (3d Cir. 1994) (discussing the use of *in limine* hearings); *Claar v. Burlington N.R.R.*, 29 F.3d 499, 502-05 (9th Cir. 1994) (discussing the trial court's technique of ordering experts to submit serial affidavits explaining the reasoning and methods underlying their conclusions).

The amendment continues the practice of the original Rule in referring to a qualified witness as an "expert." This was done to provide continuity and to minimize

change. The use of the term "expert" in the Rule does not, however, mean that a jury should actually be informed that a qualified witness is testifying as an "expert." Indeed, there is much to be said for a practice that prohibits the use of the term "expert" by both the parties and the court at trial. Such a practice "ensures that trial courts do not inadvertently put their stamp of authority" on a witness' opinion, and protects against the jury's being "overwhelmed by the so-called 'experts'." Hon. Charles R. Richey, *Proposals to Eliminate the Prejudicial Effect of the Use of the Word "Expert" Under the Federal Rules of Evidence in Criminal and Civil Jury Trials*, 154 F.R.D. 537, 559 (1994) (setting forth limiting instructions and a standing order employed to prohibit the use of the term "expert" in jury trials).